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AGRICULTURAL MARKETING IN INDIA

Report on the

MARKETING OF COFFEE

IN

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AND

BURMA

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INTRODUCTION.

The preparation of this marketing survey is due in a large measure to the generosity of the Indian Coffee Cess Committee which provided an Assistant Marketing Officer for investigation work. It is hoped that the information and suggestions contained in the report will be of use to the Committee in developing the market for Indian coffee and improving the present position of producers which has been seriously menaced by a rapid increase of production in other countries in the absence of a corresponding increase in the world consumption of coffee. The report sets out many points of detail which are worthy of attention. Most of these are referred to in the inter-chapters, but some of the main points may be summarised here.

The question of international regulation, for example, might well be considered on the same lines as tea or rubber. Brazil which is by far the largest producer has indicated her readiness to co-operate and in her efforts to stabilise the market has destroyed more coffee in the past seven years than India has produced in a century and a quarter.

Steps have already been taken to encourage the sale of Indian coffee in the United Kingdom, but a more active policy to promote sales in other countries is required. United States, for example, imports as much coffee as all other countries put together but the purchases of Indian coffee are negligible. In Canada, Kenya increased her sales by 40 per cent in the course of three years but as against 120,000 cwt. of East African coffee Canada takes only 3 or 4 hundred cwt. from India. Australia, New Zealand and South Africa should present opportunities as well as France and the Scandinavian countries when conditions are more settled. It should also be possible to increase sales inside India, particularly in Northern India, where at present consumption is lower than almost anywhere else in the world.

The quality of Indian coffee is good but to establish a footing in new markets, it is essential to adopt some standard system of grading and marking and grade specifications have been drawn up, which would enable the AGMARK to be used on raw coffee and on roasted beans and ground coffee in tins. London wholesale buyers are probably the only people in the world who have any understanding of the present peculiar system—or lack of system—

in the classification and grading of Indian coffees. Standardisation is therefore particularly necessary for developing new markets in America and elsewhere as well as for the retail trade in India. Indian coffee has a reputation for quality and to maintain this only top grades should be exported. There is an ample market in India for the lower grades of *arabica* coffee and also for the cheaper *robusta* coffee if the needs of the poorer people are to be met.

At present almost half the coffee is prepared by the dry method and sold as "Cherry" (Native) coffee, which sells at about Rs. 10 per cwt. less than "Plantation" coffee. This represents a distinct loss to the producers of Native coffee who are mainly the small planters. Improved water supplies and facilities for assembling pulping, curing and marketing their coffee are required. Such problems need to be examined district-wise in those areas where small holders are numerous. The small producers also suffer from variable deductions and high rates of commission and other charges. This indicates the need for the regulation of markets and market charges as has been done in the case of other commodities.

Apart from these more general considerations the report deals with many points of detail concerning finance, adulteration, market news service, manufacturing, preparation and processing of coffee, which, if attended to, should improve the marketing of Indian coffee and help to alleviate in some measure the present plight of the planters.

Thanks are due to the many persons and firms who rendered much help and assistance in the way of providing information used in compiling this report.

NOTE.—The Government of India should not be regarded as assuming responsibility for all or any of the material contained in this report.

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WORLD TRADE.

A.—Introduction.

The lure of coffee transcends all climates and races. It draws its votaries from all classes, communities and religions, holds its sway from the hottest tropics to the coldest frigid and occupies the position of one of the foremost temperate beverages of the world. "Coffee is something more than a beverage. It is one of the greatest adjuvant foods." It is a stimulant to the heart, nerves and kidneys, particularly to the brain. It is valued for the pleasurable feeling and the increased efficiency it produces. The main principles in coffee are the caffeine, which increases the capacity for muscular and mental work, and caffeol, which supplies the flavour and the aroma. As a tonic, well made coffee cannot be surpassed even by tea and cocoa which are its rivals.

The original home of the coffee plant is believed by some authorities to be the mountainous regions of Abyssinia whence it was introduced into Arabia in the fifth century, though the cultivation there was not intensive till the fifteenth century. It is also claimed that coffee is indigenous to Arabia. Anyhow, the credit for discovering the use of the beverage and for encouraging the cultivation of the plant goes to the Arabians. The Dutch were the first to introduce coffee into Europe from Arabia while the French closely followed them. Some say that coffee was introduced into India in 1600 while others give the date as 1695. In 1715 coffee was introduced into Haiti and Santo Domingo. About the same time the French started its cultivation in the Isle of Bourbon. In 1718 the Dutch took the cultivation of coffee to Surinam. It was in 1727 that the first plantation of coffee was opened in Brazil with plants taken from French Guiana. In 1730 the English took the plant to Jamaica, and the Spanish introduced it into the Philippines from Java in 1740. Ten years later the Dutch took coffee to the Celebes and growing commenced in Guatemala about the same time. The cultivation of coffee in Mexico began in 1790, in Hawaii in 1825 and in Salvador in 1840. In 1878 the English started growing coffee in British Central Africa. The French took the plant to Indo-China in 1887 but it was not till 1901 that coffee was introduced into British East Africa. Now-a-days the important coffee producing countries are Brazil, Colombia, Venezuela, Mexico, Salvador, Guatemala, Costa Rica, Nicaragua, Haiti, Santo Domingo, Jamaica, Puerto Rico, Sumatra, Java, Ethiopia, Kenya, Arabia and India.

In some countries such as Java and Sumatra coffee is to this day brewed from the leaves of coffee plants which are roasted and ground. Coffee made from the fruit of the plant was probably first used by the natives of Africa as a concentrated food in the shape of balls of coffee powder mixed with fat. About 800 A. D. whole ripe berries were crushed and made into balls. Later the berries were dried and used similarly. Over 1,000 years ago a wine was prepared from the juice of hulls and pulp of the ripe berries. The first consumers of coffee put dried beans in cold water and drank the liquor. This drink was improved by crushing the raw beans and hulls and steeping them in water. About 1,000 years ago a decoction made from boiling the dried fruit, beans and hulls was used as a medicine. Hippocrates, the father of medicine, is said to have prescribed coffee to his patients. Later a decoction was made only of hulls. This drink which is known as Sultana coffee is used even now in Arabia.

Coffee drinking was known in Egypt and Arabia in the fifteenth century, though there was a temporary opposition to it on the ground that it was a wine.*

Coffee houses—known as *kahveh kanes*—had been established in Turkey at about the same time. The first modern coffee house (*Caffe*) is, however, said to have been opened in Italy in 1645. It was Italy that gave the coffee house idea to the western countries, although the French and Austrians improved on it. The first coffee house in Paris was opened in 1672, in London in 1652, in Hague in 1664, in Hamburg in 1680 and in Vienna in 1683.

It was in the thirteenth century that dried beans after hulling began to be roasted. The roasting process is said to have been first tried by Persians. The whole roasted beans were boiled and made into a drink. Powdering the roasted beans and putting the powder into boiling water came next. The coffee boiler came into use in the sixteenth century. While the coffee powder was being boiled, cinnamon and cloves were added and the liquid was served with a drop of essence of amber and served in cups in the Levant. The Turks later added sugar while coffee was boiling. Boiling continued as the chief method of making coffee till the eighteenth century. It was a Dutch ambassador to China who in 1660 tried coffee with milk following the practice of mixing milk with tea. The idea of making an infusion of coffee started in France in 1711. Ground coffee was put in a cloth bag and boiling water was poured on it. This was followed by many inventions of patent coffee pots and percolators of different types. The best results are obtained by simple percolation or simple filtration which are practised at present. For obtaining a high class cup of coffee, however, it is necessary that the coffee must be fresh and of good grade and the grinding should, if possible, be done just before using. Coffee may be drunk by itself, with or without sugar, milk or cream.

According to the total quantity of coffee consumed, United States (which consumes about half), France, Germany, Belgium, Sweden, Italy, Netherlands, Denmark and Spain stand high in the order mentioned. From the point of view of *per capita* consumption of coffee, Sweden, Cuba, Denmark, Belgium, United States and Norway stand topmost and Japan, China and Russia lowermost. If the Brazilian figure of net available supply refers only to coffee used for consumption, Brazil is the leading consumer of coffee per head.

The popularity of coffee as one of the foremost beverages of the world brought in its wake a large number of substitutes and mixtures. Prepared coffees—coffees from which caffeine is removed to some extent, dry coffee extracts which dissolve in water and coffee essences, coffee tablets and flakes—are used in Europe and the United States. Coffee flavouring is also used in the preparation of desserts and confectionery. Imitation coffee berries used to be manufactured out of fire-clay. They were mixed with real berries and roasted with them so that they might absorb some of the colouring matter and oil. They were also made of moulded chicory in England (under a patent in 1850) and France. In Rumania ground coffee, chicory and peas were used for the purpose. Imitation coffee beans and “coffee-pellets” in America usually consist of wheat flour, chicory, bran and occasionally coffee. In Germany two types of fictitious coffee existed, one made of chicory and the other of lupines; also ground and roasted seeds of *Cassia tora* or *C. occidentalis*—Dangway beans—have been sold under the name of “mogdad coffee”. The use of seeds

*The word for coffee in Arabic, *qahwah*, is the same as one of those used for wine. The Turkish word is *kahveh*.

of *Gaertnera vaginata*, mixed and roasted with coffee beans, or entirely substituted for them was also patented in 1888. The beans of a species of *Phaseolus* are reported to be roasted, ground and sold as Congo coffee. The high prices obtained for coffee till about 1930 appear to have stimulated the demand for cheap additions. The main reason for using additions and fillers in ground coffee is to keep down the cost of blends. Chicory (*Cichorium intybus*) the use of which appears to have originated in Holland about 1750 holds the first place in the ranks of coffee adulterants. It is prepared from the roots of the plants which are cut, dried and roasted. Apart from chicory, cereals, grams, beans, peas, turnips, carrots, parsnips and other vegetables, dried and roasted figs, dried dates, caramel and malt are used in many countries. "The diminished consumption of coffee in England is doubtless largely due to the frequency and extent of its sophistications."* French, Italian, Dutch and German consumers and people in the southern part of the United States prefer chicory with their coffee. The introduction of Food and Drugs Adulteration Acts in some countries has, however, checked the use of such additions.

Coffee belongs to the genus *Coffea* under the Natural Order *Rubiaceæ* in which are included two other important economic plants, *Cinchona* and *Ipecacuanha*. Among the genera which contribute plants of horticultural interest in India are *Nauclea*, *Gardenia*, *Ixora* and *Mussaenda*.

A temperate climate in a tropical zone is most suitable for coffee cultivation. Coffee grows best on a well drained rich soil which is moist, friable and contains humus. The existence of luxuriant growth of trees is generally an indication of the suitability of the soil for coffee. A mean annual temperature of about 70°F. with an average minimum of not less than 55° and an average maximum of about 80° is generally suitable. The coffee plant cannot stand frost. Coffee grows at altitudes from sea level up to the frost level which is about 6,000 feet in the tropics. The annual rainfall should be about 70 inches, as evenly distributed as possible. The coffee plant requires sunshine to a certain extent only. Hill slopes are suitable as on them the plants are not exposed to the sun throughout the day. An important factor in the successful cultivation of coffee is shade which protects the plants from the heat of the sun. In most parts where natural shade is not available coffee is shaded by trees planted between the rows (see plate facing page 18). Coffee plants begin to bear from the third to the fifth year from seed. Among cultural operations pruning is very important. To prevent the plant from running high and growing into wood and to facilitate picking of the crop, the plants are topped generally at 2½ to 4 feet. Coffee trees are generally in full bearing between the age of 10 and 30 years.

There are some fifty species and sub-species of coffee plants, all of which are shrubs or small trees under thirty feet in height. The species most extensively cultivated is *Coffea arabica*† which is found in tropical regions and thrives in regions of high altitude (3,000 to 5,000 feet above sea level). Among all the species the *Coffea arabica* stands at the top in point of quality of bean. There are twelve varieties of this species of which Maragogipe‡ grows at elevations between 500 and 3,000 feet and produces giant beans.

*Commercial Organic Analysis by A. H. Allen, Vol. III, Part II.

†*Coffea*, from Coffee, a province of Tarea in Africa; *arabica* from Arabia.

‡Maragogipe from Maragogipe in Bahia, Brazil, where it was first observed, and where it is called *C. indigena*.

Among other cultivated species *C. robusta** and *C. liberica*† are important. The former has its home in Congo and is a much larger plant than *arabica*. The tree can be grown at elevations lower than those considered essential for the cultivation of *arabica* and it is a more prolific bearer. There are six species allied to *C. robusta*.

C. liberica which is a native of tropical West Africa is also a larger and sturdier plant than *arabica*, but the quality of the beverage is inferior. It can be grown in hotter climates. There are nine allied *liberian* species including *excelsa*.

Another species which may be referred to is *C. stenophylla*. This is a native of Sierra Leone, seeds of which were distributed by the Royal Botanical Gardens, Kew. The flavour of this coffee is said to be better than that of *C. arabica* but it takes longer time to bear and has not so far proved commercially important. Besides the above mentioned distinct species of coffee there are numerous hybrids.

The Indian species of coffee are *C. khasiana* (Khasi and Naga Hills, Manipur), *C. jenkinsii* (Kachin Hills, Upper Burma), *C. bengalensis* (Sub-Himalayan tract from the Jumna eastwards and Upper Burma), *C. fragrans* (Assam), *C. wightiana* and *C. travancorensis* (Coorg and Travancore). These again are not important from a commercial point of view.

There are more than a hundred different commercial types of coffee in the markets, most of them being *arabicas*. Judging from quality, coffees are classified as "Brazils" and "Milds". "Brazils" which form about three-fifths of the world's supply, include all coffees grown in Brazilian States, while "Milds" which form the remaining two-fifths are those which are grown in countries other than Brazil.

The "Milds" have more body, more acidity and much finer aroma than "Brazils" which are low priced coffees. The flavour of "Brazils", depending on localities, is described as flat, neutral, hard or harsh, sour groundy, earthen, muddy, smoky, woody and peculiarly pungent. The flavour of "Milds" is described as strong, heavy, rich, smooth, sharp, acidy, spicy, aromatic, syrupy and winy.

The following is a brief description of the coffees produced in important centres :—

South America—Brazil.—Santos coffee is the best in Brazil and Bourbon which is produced from trees propagated from Mocha seed brought originally from Bourbon is the best among Santos. This is a good low cost blending coffee which gives a smooth and palatable drink without any special character. The Brazilian coffee plant is the result of grafting *Cafe branco* with *Cafe murtha*. *Maragogipe* yields the largest beans and makes an elephantine roast. It is woody in the cup, though it is said by some that it is the finest coffee known.

Colombia.—The Colombian is amongst the world's finest coffees. Old coffee of higher grades when mellow with age has many characteristics of the best Indian coffees, though such coffees are scarce. The best known are Medellians which have fine rich distinctive flavour and Manizales which have a full body and flavour.

Venezuela.—Caracas coffee which is light and acidy in character is the best known in the European markets.

**C. robusta* which is identical with *C. laurentii* (Wild) which is one of the *C. canephora* (Pierre) group. It is also known as Congo coffee.

†*Liberica*. from Liberia.

Central America.—The produce from Guatemala, Honduras, Salvador, Costa Rica and Panama are known in the trade as Central Americans.

Guatemala.—Among the Guatemalas the mountain grown coffees have a full body, are quite acidic, spicy and aromatic in the cup. Some are so extremely acidic that they are bitter. They are good blenders. The lower altitude coffees are light in cup but flavoury.

Salvador.—The coffees are similar in quality to those of Guatemala and have a neutral flavour. They are useful chiefly as a filler. High altitude coffees have full body, while low grown coffees are thin in the cup.

Costa Rica.—The high altitude coffees are rich in body and have mild sharp acidic flavour. They are well prepared and graded and are esteemed by blenders. The coffee from lower areas is more neutral in cupping quality.

North America—Mexico.—The coffee most cultivated in Mexico is said to be from Mocha seed. It has sharp acidity and very good flavour and is suitable for blending. Coatepec coffee is the finest in Mexico. It is quite acidic and has a rich body, splendid bouquet, ranking with the best grades of the world.

West Indies.—Among the islands of West Indies, Puerto Rico, Haiti, Jamaica and Santo Domingo and Guadeloupe are important for coffee from commercial point of view.

Haiti.—The Haitian coffee is rich, fairly acidic and mildly sweet in flavour and is of average quality. The naturals are used extensively for French roast.

Puerto Rico.—The superior grades of Puerto Rico are among the best grades in the trade. They have a strong heavy body and make good blends.

Jamaica.—The Blue Mountain coffee of Jamaica is celebrated and fetches the highest price of any coffee in the world. It is rich, full and mellow and aromatic in the cup.

Africa—Ethiopia (Abyssinia).—Harari (Mocha longberry) is the produce from plantations, while the Abyssinian (*kaffa*) is the produce of wild *arabica* plants. Coffee of good produce of Harar resembles Mocha in cup quality but is more acidic; it is preferred to Mocha by some on account of its winier flavour.

British East Africa—Kenya.—Kenya coffee makes a fine liquor and is said to have the characteristics of Mysore coffees. In England they are often blended with better quality coffees of Central America.

Uganda.—Uganda coffee is sweeter in the cup than Kenyas.

Tanganyika.—Tanganyika coffee grown in Mount Kilimanjaro is of excellent quality.

Coffees of Northern Rhodesia and Nyasaland are similar to Kenyas.

Asia—Yemen (Arabia).—The Arabian or Mocha (moka/morkha) coffee is recognised all over the world as the best coffee. It has a pungent winy flavour and sharp acidity. It is esteemed for blending and is valuable as after-dinner coffee.

East Indies.—Some of the coffees produced in East Indian islands, viz., Sumatra, Java, Timor, Celebes, etc., are known for their quality.

Among **Sumatra** coffees there are some which are considered to be the finest in the world. They have a smooth, heavy body, possessing a syrupy richness. Mandheling and Ankola coffees are among the finest and highest priced coffees. They have a heavy body and exquisite flavour and aroma. They are two of the best known coffees in the American trade.

Java coffees, which are not so good as those of Sumatra, have a grassy flavour.

India.—Indian coffees are celebrated for the care in preparation and quality. They have a deep, clear and distinctive strong flavour. Coffees from Nilgiri hills, Shevaroy's, Anaimalais, Kanan Devan Hills, Mysore and Coorg rank among the best coffees in the world. The coffee produced in Mysore in the Bababudan and Biligirirangan Estates is considered equal to that of Nilgiris in quality. Mysore coffee which has a heavy body ranks high in the English market.

Coffee occupies an important place in world economy. About 100 crore rupees worth of coffee enters the world market every year of which India's share comes to about a crore of rupees. Large unexploited regions in different parts of the world have been brought under coffee and smiling coffee plantations have sprung out of hill slopes in several countries. Many thousands are employed on the estates and in the distributive trade. The interests and fortunes of millions representing all classes are, therefore, centred in the coffee industry. And yet, there have so far been no effective co-ordinated efforts to handle the problems common to the trade with a view to arriving at a definite line of action by those interested in the coffee industry throughout the world. Unsuccessful attempts were made by Brazil and the Central American States to establish an international organisation. In 1936 a conference of the South and Central American coffee producing countries was held at Bogota in Colombia to find methods of controlling supplies, stabilising and maintaining prices at economic levels and endeavouring to harmonise all the interests which form part of the coffee industry as a whole and for establishing contact between producers, importers, roasters and other divisions of the trade. The only tangible result of the conference seems to have been the inauguration of a Pan-American Coffee Bureau in New York for studying and investigating the several phases of the coffee industry.

B.—World acreage and production.

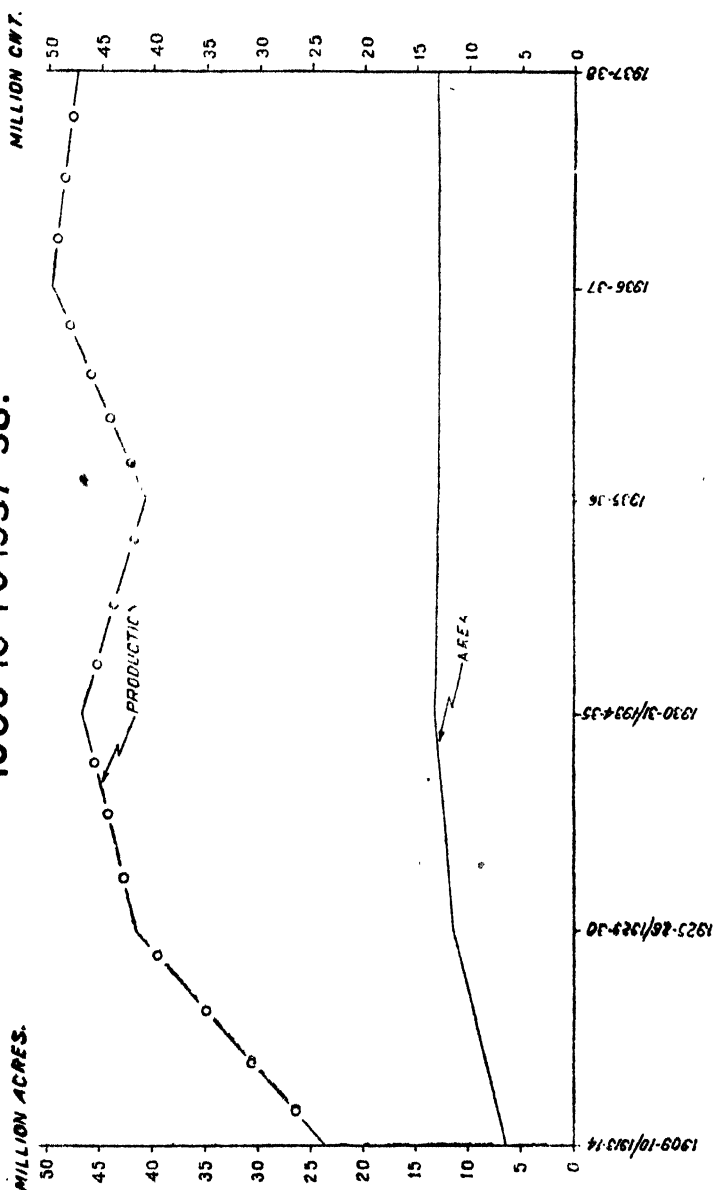
The world statistics of acreage and production of coffee are incomplete and therefore have to be taken with reservations. For several of the important countries the exports are taken as equal to production. Unofficial estimates form the basis of the data for some countries while the information is not forthcoming from some other countries. The main sources of statistical data are (1) the "International Year Book of Agricultural Statistics", (2) the "New York Coffee and Sugar Exchange" figures, (3) the "Tea and Coffee Trade Journal" figures and (4) "Rowes Statistics". The variations in the figures published by these different authorities are appreciable.

The following illustrates the variations :—

World production in millions of quintals.

Year.	International Year Book of Agriculture.	New York Coffee and Sugar Exchange.	Tea and Coffee Trade Journal.	Rowes Statistics.
1927-28	22,700	20,340	21,036	20,460
1928-29	14,000	10,860	11,844	11,760
1929-30	25,120	22,560	23,700	22,380

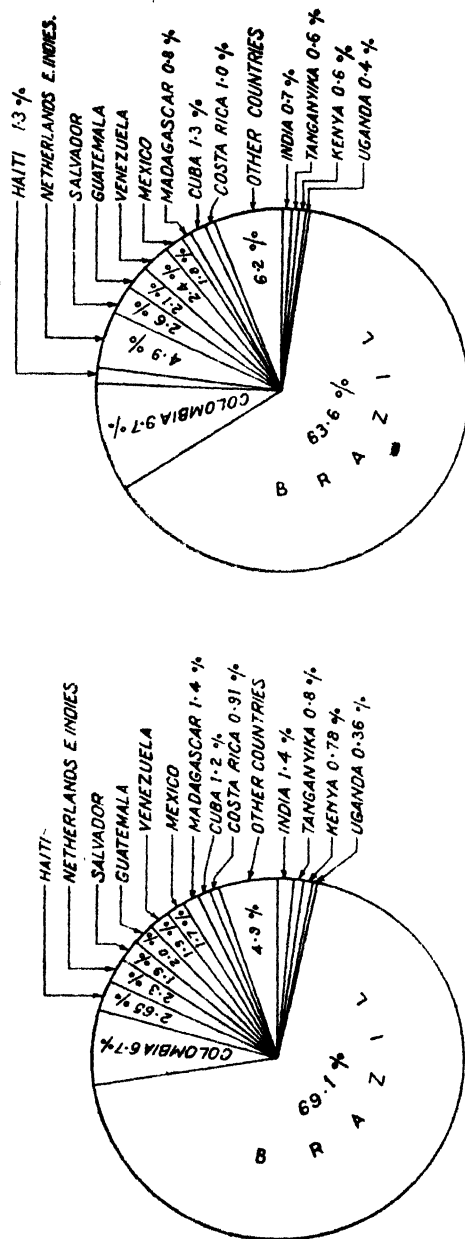
COFFEE WORLD AREA & PRODUCTION 1909-10 TO 1937-38.



SHARE OF IMPORTANT COUNTRIES IN ACREAGE & PRODUCTION OF COFFEE IN THE WORLD.

AREA

PRODUCTION



The necessity for further international collaboration for compiling more complete and accurate data is therefore obvious.

(i) *Acreege*.—The figures of area and production of coffee in the principal countries of the world are given in Appendix I. (See diagrams facing pages 6 and 7). The world acreage under coffee has more than doubled itself since the War of 1914-18. The average pre-War coffee area in the world was about 6·3 million acres which rose to 13·0 million acres during the quinquennium ending 1934-35. The average annual area during the pre-depression period (1925-26 to 1929-30) was 11·4 million acres. As compared with the average area during 1930-31 to 1934-35 the acreage declined in 1935-36 and 1936-37. Brazil is by far the most important country where about 70 per cent of the world's coffee area is concentrated. The pre-War average acreage under coffee in Brazil was 4·5 million acres which increased to 7·8 million acres during the quinquennium ending 1929-30 and 9·1 million acres during the five years 1930-31 to 1934-35. The restriction schemes in Brazil had led to a contraction of area after 1933-34 and in 1936-37 the area under coffee in Brazil was only 8·5 million acres, in 1937-38, 8·4 million and in 1938-39, 8·2 million acres.

The development of coffee plantations in Colombia, which is the next important coffee producing country with about 7 per cent of the world's coffee area, has been still more remarkable. The average annual area under coffee in Colombia during the pre-War period was only 114,000 acres which increased to 883,000 acres during the quinquennium 1930-31 to 1934-35 and to 885,000 acres in 1937-38. The coffee area in India accounts for less than 2 per cent of the world total and has remained fairly steady during the past 30 years. Kenya records a rapid development and has an area of 104,000 acres under coffee as against only 5,000 acres during the pre-War period.

(ii) *Production*.—The average annual production of coffee in the world during the quinquennium 1930-31 to 1934-35 was about 47 million cwt. or 2,350,000 tons as against about 23·5 million cwt. or 1,170,500 tons during the pre-War period. In 1935-36 the total world production declined to 40·9 million cwt. entirely due to the lower production in Brazil. In 1936-37, however, there was a sudden rise in the world production to 49·9 million cwt. again due to the rise of production in Brazil. In 1937-38 it is estimated at 47 million and in 1938-39 at 43 million cwt. Brazil accounts for over 60 per cent of the world production; Colombia comes next with about 11 per cent; Netherlands East Indies follows with 5 per cent. India produces less than 1 per cent of the world total, while Kenya accounts for 0·6 to 1·0 per cent of the world production.

India's share of production of "mild" coffees in the triennium ending 1937-38 was about 2·0 per cent. It was 3·5 per cent in the quinquennium before the War of 1914-18, 2 per cent in 1925-26 to 1929-30 and 1·9 per cent in the quinquennium ending 1934-35. The following table indicates the share of world production of "mild" coffee :—

Share of world production of "mild" coffee.

	1909-10 to 1913-14	1925-26 to 1929-30	1930-31 to 1934-35	1935-36	1936-37	1937-38
			(Per cent)			
Colombia	17·23	25·6	26·6	26·7	27·9	32·0
Netherlands East Indies	9·0	15·2	13·7	11·8	13·0	13·0

Share of world production of "mild" coffee—contd.

	1909-10 to 1913-14	1925-26 to 1929-30	1930-31 to 1934-35	1935-36	1936-37	1937-38
			(Per cent)			
Salvador	7.7	7.7	7.1	6.2	7.9	7.5
Guatemala	12.1	7.0	5.5	7.1	7.0	6.8
British East Africa	0.54	2.7	3.9	4.6	4.5	5.4*
Mexico	8.7	5.7	4.8	5.2	4.9	4.6
Cuba	1.2	2.7	3.4	3.9	3.3	3.9
Venezuela	13.1	9.0	7.0	6.8	7.5	3.8
Madagascar	0.5	0.6	1.9	2.2	2.9	3.7
Haiti	8.71	4.7	3.6	3.8	2.6	3.1
Costa Rica	3.5	2.7	2.8	2.3	2.8	2.7
India	3.52	2.0	1.9	2.0	1.6	2.0
Other countries	14.2	14.4	17.8	17.4	14.1	11.5

*Provisional figure.

Colombia's share of production has nearly doubled since the War. The share of British East Africa has increased more than ten times in the last 25 years. India's share of production of "mild" coffee is fairly steady during the last 14 years.

C.—International trade.

As early as 1906, the valorisation schemes that were put into operation from time to time in Brazil sought to stabilise prices by controlling and regulating exports. The success of these schemes led to the crisis that overtook the coffee industry. The propping up of prices without controlling production resulted in the further expansion of the coffee area. To meet the situation a new scheme was evolved and put into force in June 1931. Fresh planting was forbidden. An export tax of 45 milreis (11s. 8d.) per bag was levied and the amount thus collected was used for buying up the lower grades for subsequent destruction. The standardisation of export quality, the prohibition of sale of inferior qualities, and the financing of the crop were taken up

by the National Coffee Department. The following table indicates the magnitude of the volume of coffee destroyed in the last eight years :—

—	Quantity destroyed. (In cwt.)	Proportion to production. (Per cent)
1931-32	9,771,241	38.1
1932-33	11,871,536	39.3
1933-34	13,036,839	37.3
1934-35	7,064,661	21.7
1935-36	1,732,107	7.7
1936-37	12,866,000	41.4
1937-38*	17,119,000	56.2
1938-39*	4,295,000	(Only 9 months figure.)

*Provisional figures.

In the course of 7 years about 74 million cwt. of coffee have been destroyed ; in other words, Brazil has destroyed within the last 7 years as much coffee as India produced during the last 125 years.

On the failure of the Pan-American Coffee Conference at Havana in November 1937, Brazil abandoned her traditional policy of valorisation and protection. The export tax was reduced from 45 milreis to 12 milreis per bag of 60 kgm. (132 lb.) and restrictions on exchange and on the trade in foreign currency were suspended.

The reduction in the export tax by about 75 per cent resulted in a virtual collapse of prices. The price of Brazilians fell by about 50 per cent. Prices of "mild" coffees have had to be adjusted to the lower level. It is too early to surmise the entire repercussions of the new policy adopted by Brazil. Brazilian exports appear to have increased. In May 1938 the National Coffee Department (Brazil) adopted measures regarding the distribution of shipments amongst the coffee growing states, the proportion to be sold at different prices, the buying prices and the regulation of deliveries at the ports of export and also provided for the continuation of the destruction of surplus coffee. Colombia, the next biggest producer, followed Brazil with measures for the mitigation of fall in prices. The tax on foreign exchange was reduced and the exchange rates were controlled. Vigorous propaganda in the country for increased consumption was started. Venezuela, Salvador and Cuba also attempted to devise ways and means to help the coffee industry by granting premiums on specified quantities of exports and fixing minimum selling prices etc. On the top of the various measures adopted by the producing countries for stabilising the coffee market, the Pan-American Coffee Office of New York organised a vigorous publicity campaign for the increased consumption of iced coffee in the United States. However, the fundamental problem of establishing an equilibrium between world production and consumption remains. The question is whether a permanent solution can be found by the producing countries acting together as in the case of tea.

(i) *Exports*.—The average annual world exports of coffee are about 30 million cwt. or $1\frac{1}{2}$ million tons. (Appendix II gives the share of the exports of different countries of the world from 1909-37). It rose from 21·3 million cwt. to 27·4 million in 1925-30 and 30 million cwt. in 1930-34. The "Milds" have gained at the expense of the Brazilian. From 30 per cent of the world share of exports, "mild" coffees have succeeded in appropriating over 50 per cent of the world exports by 1937 and the Brazilian share has proportionately dropped. Colombia seems to be the most rapidly expanding of the producing countries. Her share of exports in 1909-13 was only 4·3 per cent but in 1937 it was 16·2 per cent. There has been a steady rise in the course of the last 27 years. Netherlands East Indies also appears to have progressed. From 2·2 per cent of the world trade before the War (1914-18) her share has risen to about 6 per cent. East African coffees have done particularly well. Exports before the War of 1914-18 from British East Africa were almost negligible, being only 0·18 per cent. Their share of the world trade has been rapidly mounting and it is now in the neighbourhood of 2·7 per cent.

The comparative statement of the share of the world trade for the more important exporting countries is given below :—

Share of world trade.

	1909-13. Annual average.	1925-29. Annual average.	1930-34. Annual average.	1937.
	(Per cent)			
Brazil	70	60·8	58·3	48·5
Colombia	4·3	10·5	12·3	16·2
Netherlands East Indies	2·2	6·1	5·1	6·5
Salvador	2·7	3·2	3·4	4·5
Guatemala	3·6	3·9	2·9	3·1
Venezuela	4·7	3·9	3·0	2·8
British East Africa	0·18	1·3	1·9	2·7
Mexico	2·1	1·9	2·0	2·3
Costa Rica	1·2	1·3	1·5	1·8
India	1·2	0·7	0·7	0·4
Jamaica	0·4	0·3	0·2	0·2

(ii) *World net imports*.—Trade restrictions, import quotas, compensation devices, exchange manipulations and political upheavals have tended to check the assimilation of the increasing production of coffee. While production increased by more than 100 per cent from the pre-War average, net imports only increased by about 50 per cent in the same period. Demand has evidently failed to keep pace with the supply and this in short is the major problem which the coffee industry has to face.

Appendix III shows the imports of coffee into the principal importing countries. More than 50 per cent of the world imports are taken up by the United States of America. This is equivalent to 25 times the production in India. France is the next biggest consumer taking about 3·6 million cwt. and Germany follows closely with about 3 million cwt. The following table indicates the share of different countries in world imports and also the proportion of “Milds” and “Brazilians” :—

Percentage of imports of coffee into principal importing countries.

	1909-13	1925-29	1930-34	1937	Percentage of	
					"Milds"	"Brazilians"
	(Per cent)					
United States of America	39·2	47·4	47·9	51·9	17·3	82·7
France	10·6	12·0	12·3	12·4	55·0	45·0
Germany	17·3	8·8	9·6	11·9	61·0	39·0
Belgium	4·8	2·9	3·3	3·4	67·0	33·0
Sweden	3·2	3·0	3·0	3·2	40·0	56·0
Netherlands	12·2	4·3	3·1	2·6	54·0	66·0
Italy	2·5	3·3	2·8	2·5	43·0	57·0
Denmark	1·4	1·8	1·8	1·8	63·0	37·0
Great Britain and Ireland	3·9	2·3	2·4	1·3	99·8	0·2
Canada	0·6	0·85	1·0	1·2	87·0	13·0
Union of South Africa	1·1	0·95	0·8	0·9	52·0	48·0

While the imports into the United States of America went up by about 100 per cent since the War of 1914-18 the European countries took in only about 25 per cent more than the pre-War average. The share of “Milds” to “Brazilians” is the highest in the United Kingdom and lowest in the United States of America. While Netherlands, Italy and Sweden take large quantities of “Brazils”, a considerable portion of the imports into Canada, Belgium, Denmark and France is “Milds”.

D.—India's position in the world trade.

Quantitatively India's position in the world trade is of minor consequence, her share being 0·4 per cent in 1937, though qualitatively she holds her own with world's best coffees from Colombia, Costa Rica, Mexico, Puerto Rico, Jamaica, Kenya, Arabia, Sumatra, etc. Indian coffees are known for their quality and care in preparation. The “mild” coffees from Central and South America and British East Africa are her biggest competitors. The Brazilian coffees are a class apart being inferior coffees used as fillers in the chief consuming countries.

The following indicates the share of the trade of different countries of the world in "mild" coffees :—

Share of the world trade in "mild" coffees.

	1930-34 annual average.	1935	1936	1937
		(Per cent)		
Colombia	29.6	32.2	29.7	31.4
Venezuela	7.2	7.7	7.7	5.4
Guatemala	7.0	5.8	6.3	6.1
Salvador	8.1	7.1	6.2	8.7
Nicaragua	2.1	2.6	1.6	2.0
Costa Rica	3.5	3.5	2.7	3.4
Mexico	4.9	4.5	5.3	4.5
Haiti	5.0	2.7	4.5	3.2
Jamaica	0.6	0.5	0.6	0.4
Kenya	2.0	2.6	2.6	1.8
Tanganyika and Uganda	2.6	3.6	3.0	3.5
Netherlands East Indies	12.2	11.5	11.7	12.6
India	1.6	1.1	1.7	0.8
Other countries	13.6	14.6	16.4	16.2

The Central and South American countries together hold more than 60 per cent of the trade. India's share of the "mild" trade which was 1.6 in the quinquennium ending 1930-34 compares favourably with her share of world production of "mild" coffees which was 1.9 per cent during the same quinquennium. Colombia, Venezuela, Guatemala, Costa Rica and Kenya are India's major competitors. The position of Indian coffee in the chief consuming markets of the world is dealt with in detail in a succeeding chapter. United Kingdom, France, Germany, Norway, Belgium, Italy and Australia are the chief importers of Indian coffee.

INTER-CHAPTER.—WORLD TRADE.

Coffee valued at about 100 crore rupees enters the world market every year. Of this, India's share comes to about one crore. Statistics of acreage and production are, however, incomplete and the necessity for further international collaboration for compiling fuller and more accurate data is keenly felt.

The recorded world acreage has more than doubled since the War of 1914-18, about 70 per cent being concentrated in Brazil. The acreage under coffee in India is only about 2 per cent of the world total and has remained fairly steady during the past 30 years. In Kenya, the acreage has increased from 5,000 acres in 1914 to 104,000 acres at present.

The average annual production of coffee in the world in the quinquennium 1930-31 to 1934-35 was about 47 million cwt. as against 23·5 million cwt. in 1914. In 1937-38 it is estimated at 47 million and in 1938-39 at 43 million cwt. While Colombia's share of production has more than doubled and that of British East Africa has increased more than 10 times during the last 25 years, India's share of "mild" coffees has remained more or less steady during the last 14 years. It compares favourably, however, with her share of world production of "mild" coffees.

The success of the valorisation schemes, which were put into operation in Brazil to stabilize prices by controlling and regulating exports, led to the crisis that over-took the coffee industry. The propping up of prices without controlling production resulted in the further expansion of the area. On the failure of the Pan-American Conference at Havana in November 1937, Brazil abandoned her traditional policy of valorisation and protection. As a result the price of "Brazilians" fell by about 50 per cent and the price of "mild" coffees had to be adjusted to the lower level.

The annual world exports of coffee rose from 21·3 million cwt. to 27·4 million in 1925-30 and 30 million cwt. in 1930-34. The "milds" have gained at the expense of "Brazilians". From 30 per cent of the world share of exports, "mild" coffees have succeeded in appropriating over 50 per cent. Trade restrictions, import quotas, compensation devices, exchange manipulations and political upheavals have checked the assimilation of the increasing production of coffee. While production increased by more than 100 per cent from the pre-War average, net imports increased by only about 50 per

cent during the same period. Demand has failed to keep pace with supply and this, in short, is the major problem that the coffee industry has to face.

The United States of America takes more than 50 per cent of the world imports, *i.e.*, an amount equivalent to 25 times the production in India. France is the next biggest consumer taking in about 3.6 million cwt. and Germany follows closely with about 3 million cwt. While the imports into the United States of America went up by about 100 per cent since the War (1914-18), the increase in the European countries was only about 25 per cent.

CHAPTER I.—SUPPLY.

A.—Indian supplies.

The cultivation of coffee in India is mainly confined to the southern parts, *viz.*, the Madras Presidency, Coorg and Mysore, Cochin and Travancore States, the extent of coffee in other areas, *viz.*, Assam, the Central Provinces, Bihar and Orissa being practically negligible.

The coffee plant was introduced into India early in the seventeenth century by Bababudan, a Muslim pilgrim, who having been attracted by the fragrance of its flowers brought seven seeds on his return from Mecca and planted them on Chandragiri Hill, in Mysore State, which was later named after him and is visited both by Muslim and Hindu pilgrims. Plantations were first started, on an experimental basis, in the plains in Malabar (Tellicherry) but regular coffee estates came to be opened only towards the end of the eighteenth century. From the plains the plant was taken to higher elevations. (See plate facing page 18). In 1820 and next few years coffee plantations were started on the Bababudan where the local people had small plots under coffee. About 1826 the first estate in Wynaad (at Manantoddy) was opened. Shevaroy's followed in 1830 and Nilgiris in 1839. The well known Ochterlony Valley Estates in the Nilgiris were started in 1850. Coorg commenced cultivation in 1840 but it was not till 1854 that systematic plantations were opened. Travancore had its first plantation about 1840. The Kannan Devan area in Travancore started in 1880. Nelliampathis, in Cochin State, took up the cultivation in 1860. Anaimalais plantations started as late as 1906.

Less than 150 years ago, coffee was practically unknown in India's commerce while now it forms an important commodity. The value of the annual production of coffee in the country is estimated at about a crore and a half of rupees and the plantations provide employment for nearly a lakh of persons. Up to 1800 the total exports from Cannanore were said to be about 6 chests. By 1860 the exports amounted to as much as 104,000 cwt. In 1872 they were reported to be about 507,000 cwt.

(1) AREA.

(a) *Method of estimation.*—The figures published annually in the Indian Coffee Statistics* are based on data furnished by coffee planters in standardised form (see Appendix IV). Prior to 1931-32, estates having an area of less than 10 acres were excluded from these returns, but from that year onwards smaller plantations having an area between 5 and 10 acres have also been included on the recommendation of the Royal Commission on Agriculture in India. The figures published in the Indian Coffee Statistics prior to 1931-32 are, therefore, not strictly comparable with those for later years. The filling in of the standardised form is not compulsory on the part of the coffee planter and in cases of default the local revenue authorities prepare their own estimates which are generally based on the previous year's returns (if any) and the figures of other estates for which returns have been received. In view of the extensive and scattered nature of the estates the material supplied by the district revenue officials for making these estimates is often mere guess work. At the same time

*Published by the Director General of Commercial Intelligence and Statistics.

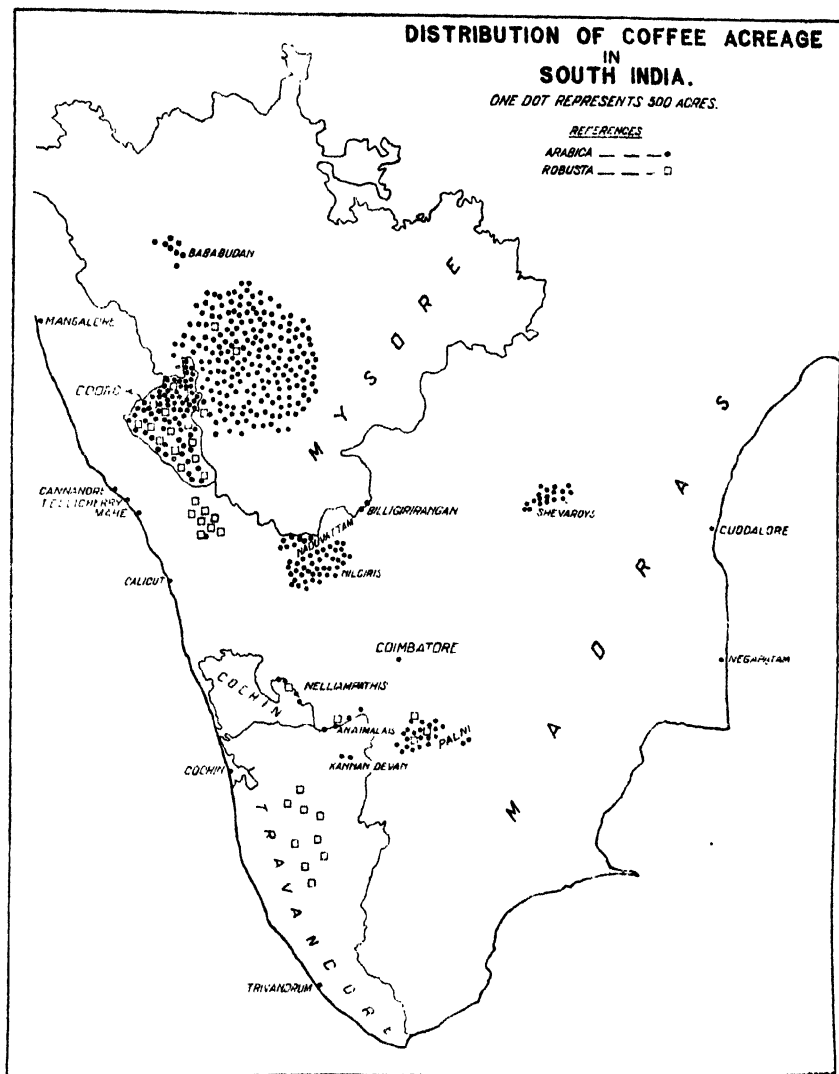
it is understood that all coffee planters do not receive the standardised form regularly.

In the Madras Presidency, the practice of getting the returns from planters varies almost from district to district. The standard forms are not circulated among planters in the Malabar and Madura districts for which estimates are made by the local revenue officials. For Coimbatore district, the data are supplied by the Anaimalai Planters' Association by getting the forms filled in by only the European planters in the area, as the coffee estates in that area are said to be almost entirely owned by Europeans. In the Nilgiris, the *Tehsildars* address the planters annually to furnish the required statistics in the prescribed form. Similar is the practice for other areas; and for estates below 10 acres, estimates are provided by the village revenue officials. It is, therefore, obvious that the figures of area as published in the Indian Coffee Statistics are not complete.

The Agricultural Statistics of India*, in which figures of area and several other agricultural statistical details are published, purports to give the entire acreage under coffee in India. The figures are understood to be based on the returns furnished by the village accountants to the local revenue authorities. The way in which these statistics are collected by the village accountants leaves much to be desired. The abrupt rises and falls in acreage in some of the coffee producing areas are obviously due to the unsatisfactory methods of collecting the statistics. This is further borne out by the fact that in some cases the coffee area shown in the Agricultural Statistics of India is less than the area given in the Indian Coffee Statistics which excludes areas below 5 acres. For example, for 1931-32 the entire acreage under coffee in Cochin State is shown in the Agricultural Statistics of India as 1,764 acres, while the area above 5 acres is shown in the Indian Coffee Statistics as 1,915 acres. Enquiries made in regard to this discrepancy elicited the information that the figures published in the Agricultural Statistics of India were taken from the revenue survey figures. Figures of coffee area in Travancore State from 1918-19 to 1927-28 are not given in the Agricultural Statistics of India. Investigations in the course of the marketing survey, however, showed that there was considerable acreage under coffee in Travancore and also in Burma, figures for which were not included till recently; nor are small acreages in Assam, the Central Provinces, Bihar and the United Provinces mentioned. While the area under coffee in Burma is shown as 13 acres in 1935-36, investigations during the marketing survey indicated that it may be estimated at about 2,000 acres.

(b) *Total acreage.*—The figures published in the Agricultural Statistics of India are more complete in regard to area under coffee in India, except for the Travancore and Cochin States and the areas of small importance, viz., Assam, the Central Provinces, Bihar, the United Provinces and Burma. Inasmuch as figures of acreage for Travancore and Cochin States given in the Agricultural Statistics of India are either incomplete or inaccurate and in so far as the estimated acreage in these two areas and other areas of small importance constitute only about 5 per cent of the total area under coffee in India, they may be excluded for the purposes of tracing the fluctuations, trend, etc. Appendix V gives the acreage under coffee in Mysore State, Coorg and the Madras Presidency which together account for more than 95 per cent of the

*Published by the Director General of Commercial Intelligence and Statistics.



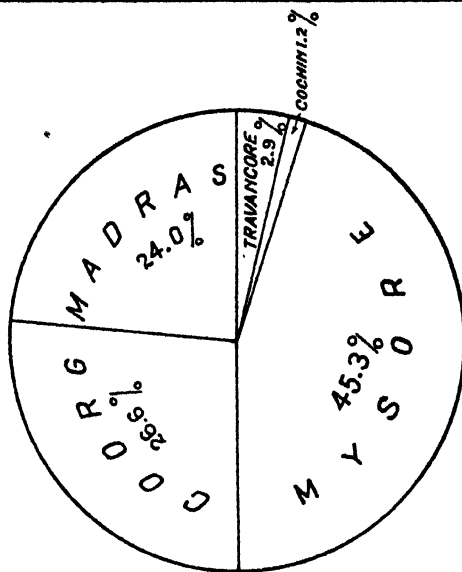
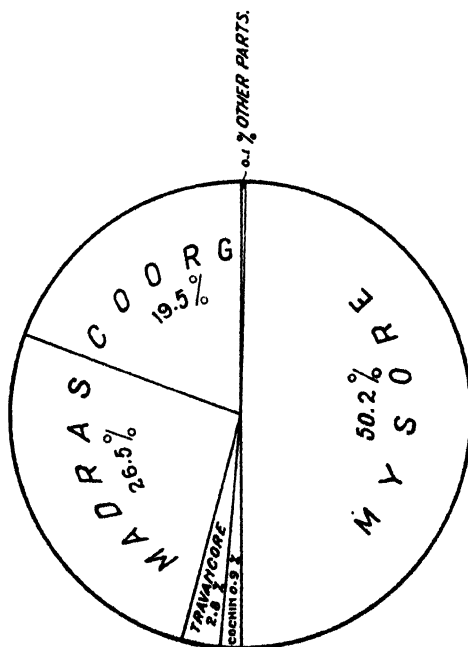
SHARE OF DIFFERENT PROVINCES & STATES IN ACREAGE & PRODUCTION OF COFFEE

IN INDIA.

AVERAGE 1932-33 TO 1936-37

ACREAGE

PRODUCTION



total acreage under coffee in this country. The relative importance of the chief coffee areas based on the estimated average of the lustrum 1932-33 to 1936-37 is shown in the following table :—

Area.

	Average area 1932- 33 to 1936-37 (Acres).	Share of total area. (Per cent)	1937-38 (Acres).
<i>Indian States—</i>			
Mysore	104,633	50·2	103,505
Cochin	2,019	0·9	2,072
Travancore	5,831*	2·8	5,627
Total	112,483	53·9	111,204
<i>British India—</i>			
Madras	55,171	26·5	56,901
Coorg	40,679	19·5	41,129
Other parts	222	0·1	222
Total	96,072	46·1	98,252
Grand total	208,555	100·0	209,456

53·9 per cent of the total area under coffee is in Indian States and 46·1 per cent in British India. Mysore tops the producing areas with 50·2 per cent, Madras Presidency accounts for 26·5 per cent and Coorg for 19·5 per cent, while Travancore and Cochin together have 3·7 per cent of the total area.

The diagram facing this page illustrates the share of different provinces and States in the total area and estimated production of coffee in the lustrum ending with 1936-37.

Assam, the home of tea gardens, has about 100 acres of coffee. Most of it is in the Khasi and Jaintia Hills where coffee is planted with other garden crops. The Central Provinces have about 90 acres of coffee in Chikalda and Kukru plateaux in the western part of the Satpura range. The area under coffee in Bihar, estimated at 20 acres, is in Ranchi. The United Provinces have only

* The acreage in Travancore from 1932-33 to 1934-35 has been estimated on the basis of the figures given for 1934-35 to 1936-37 in the Agricultural Statistics on the presumption that the small holdings in these places could not have sprung up suddenly in 1934-35.

about 2 acres consisting of scattered plants in the abandoned Government Farms near Haldwani at the foot of the Kumaon Hills. Bombay has about 10 acres mainly in the Belgaum district.

(c) *Areas of concentration.*—The success of coffee cultivation depends on many natural conditions such as, elevation, aspect, rainfall, protection from wind, soil, etc. *Arabica* coffee is grown at varying altitudes in South India but elevations between 2,500 and 5,000 feet above sea level are generally most suitable. Other conditions being equal, high grown coffees are considered superior. Normally the higher the elevation the longer is the time taken for berries to ripen but heavier rains compensate to a certain extent for the delay. Given the necessary elevation, land sheltered from wind is preferable, though positions where there is no movement of air are to be avoided. Regions liable to frost are, of course, unsuitable. A northern aspect is preferable as it is more equable and less liable to extremes of heat. An eastern aspect is the next best. The steeper the slope of the land the more noticeable is the difference in temperature. A steep south west aspect which will face the south west monsoon is not desirable. But where the land is undulating, the question of aspect has not much significance.

An average well distributed rainfall of 60 to 80 inches with a distinct rainy and dry season and a mean temperature of 70°F. are considered beneficial for coffee. Blossom showers make or mar the crop. Misty damp weather in February and March is not conducive for good blossom. A good dry spell from January to April and blossom showers of about 7 inches in April-May with fairly heavy rainfall in July and August to keep the berries from being "drought nipped" are considered to be ideal conditions.

The chief zones under coffee in India are (i) Hassan and Kadur districts in Mysore, (ii) Eastern and western slopes of the Western Ghats in Coorg, (iii) The south-western slopes of the Western Ghats—Nilgiris, Wynad in Madras, Nelliampathis in Cochin and High Ranges (Devicoolam) in Travancore, (iv) Eastern slopes of the Western Ghats in Coimbatore, Salem and Madura in Madras, and (v) Lower elevations of the Western Ghats. (See map facing page 16). Only about 2 per cent of the acreage under coffee lies outside the above mentioned zones.

(i) *Hassan and Kadur districts in Mysore.*—About 50 per cent of the total acreage in India is found in Hassan and Kadur districts in the Mysore State. Almost the whole area in Mysore is in these two districts and coffee is one of the seven major crops in the State having an area of more than a lakh acres. The prosperity of Hassan and Kadur is bound up with coffee. The light and well-drained soil of Hassan and Kadur with an annual rainfall of 59 to 150 inches at an altitude of 2,000 to 5,000 feet is eminently suited for coffee cultivation.

Though Bababudan brought the first coffee seed from Arabia and planted it in about 1600 A. D. on a hill named later after him in Chikmagalur taluk in Kadur district, the first systematic plantation was established in 1830 by Mr. Cannon near Chikmagalur. The plantations in Kadur have generally an elevation of 3,000 to 5,000 feet and are situated on a higher level than those elsewhere in the State. They are on undulating land, the levels of contiguous blocks of one estate of 150 acres, for example, vary from 3,700 to 4,150 feet above sea level. Chikmagalur has an acreage of about 30,000, Mudigere taluk about 25,000 and Koppa taluk about 14,000 acres. Koppa and Mudigere with 117 and 96 ins. respectively get the heaviest rainfall. The hill slopes near



VIEW OF A COFFEE ESTATE.



Arabica (KENT) COFFEE PLANT.

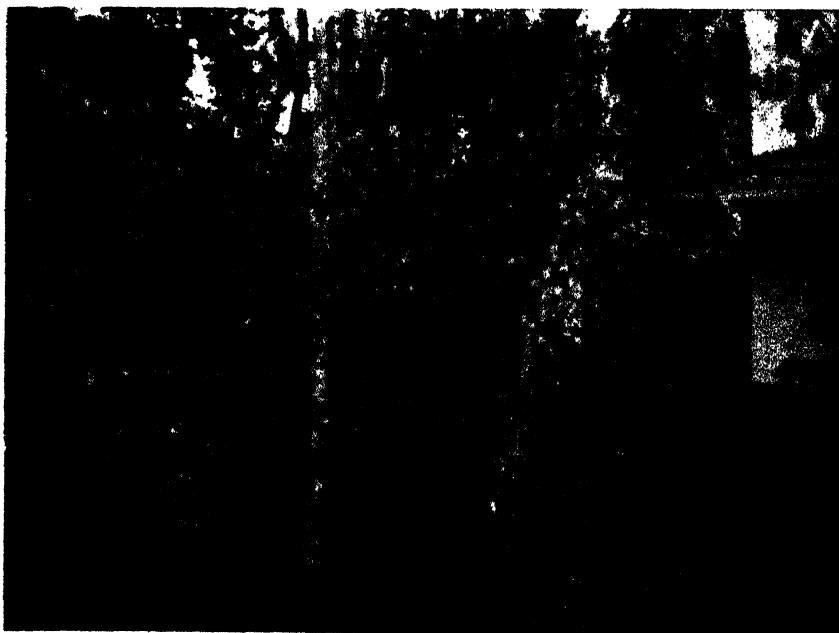
[By courtesy of the Department
of Agriculture, Mysore State].

Facing page 19.]



Robusta COFFEE PLANT.

[By courtesy of the Department
of Agriculture, Mysore State.]



DOMESTIC *robusta* PLANTATION IN TRAVANCORE.

Chikmagalur receive about 80 inches of rain a year. December to March is the dry season as is shown by the following monthly rainfall of two typical estates :—

Rainfall in two typical estates in Kadur district.

(In inches.)

Months.	1935.		1936.	
	A. Estate.	B. Estate.	A. Estate.	B. Estate.
January	..	..	0.55	..
February	..	..	..	..
March	0.14	0.17	1.11	2.3
April	2.35	2.34	..	..
May	5.10	4.44	4.45	4.16
June	7.15	6.94	14.9	13.76
July	23.48	26.1	15.59	19.34
August	17.46	16.46	11.90	12.08
September	7.81	11.3	7.51	6.90
October	8.17	8.99	6.73	5.29
November	..	..	4.36	5.37
December	0.75	0.64	0.72	0.91
Total .	72.41	77.38	67.82	70.11

The first plantation in Hassan district was opened in 1843 in Manjarabad. Belur and Manjarabad taluks in Hassan district have about 29,000 acres of coffee between them on elevations ranging from 2,000 to 4,000 feet above sea level. The rainfall in the coffee area ranges from about 55 to 120 inches. February is the driest month.

(ii) *Eastern and western slopes of the Western Ghats in Coorg.*—About 19 per cent of the total area is in Coorg where regular plantations were started in 1854. It is concentrated in 1,600 sq. miles of this ever-green stretch of land on the slopes of the Western Ghats with a rainfall ranging from 55 to 150 inches. A deep fertile soil annually renewed by the decomposition of the forest growth and the weather-beaten granite syenite and mica schist forming the mountain rocks give the necessary "mix" for coffee. The whole of the southern portion presents the appearance of a jungle. Further inland it changes to ever-green, largely intermixed with bamboo and this stretch of land for about 13 miles forms a continuous succession of coffee estates of about 70 years' standing

in the Siddapur-Pollibetta coffee district. To the west lies the Suntioppa-Madapur coffee area about 3,000 feet above sea level, to the north the Somwarpet plateaux and to the extreme south the Kutta and Nalkanad Hills about 2,800 to 3,250 feet above sea level having an average rainfall of about 121 inches.

The statistics for 1901-02 show that the total area held under coffee tenure in Coorg was 101,711 acres but of the total holdings recorded as being under coffee only about 57 per cent was actually planted with coffee. Nalkanad Hills and Kutta have the heaviest rainfall ranging from 121 to 165 inches and Suntioppa and Pollibetta the least with 54 to 150 inches.

(iii) *The south-western slopes of the Western Ghats.*—About 17 per cent of the area under coffee is distributed in Nilgiris and Wynaad in Madras, Nelliampathis in Cochin and High Ranges (Devicolam) in Travancore. Coonoor, Gudalur and Ootacamund taluks are the main coffee areas in Nilgiris. Gudalur which is on the western side of the Nilgiris, has a long spell of dry weather from November to April and gets a much heavier south-west monsoon and very little of the north-east. The rainfall is better distributed in Coonoor than Gudalur though the quantity is less. In Nilgiris coffee is grown at higher elevations than in any other part in India. The Nilgiris, where coffee cultivation was started in 1839, is the home of some of the best types of coffee in the world.

Wynaad in Malabar, where coffee planting was first done in 1826, has the largest rainfall in this group, i.e., about 137 inches. Some *robusta* coffee is grown here at the lower elevations of 1,500 to 2,000 feet above the sea level.

Nelliampathis part of which is in Cochin State and part in British Malabar, where the cultivation of coffee was started in 1860, has an acreage of about 1,600. The elevation varies from 3,000 to 3,500 feet and the rainfall from 100 to 140 inches. Coffee (*robusta*) is also grown in small quantities at lower elevations of 500 feet in the plains in Trichur taluk, mostly mixed with jack fruit and banana trees.

The High Range in Devicolam district in Travancore has only about 1,000 acres of coffee. The first clearing for coffee appears to have been made in Peermade hills in 1840. The estimated area under coffee during the peak period was 20,000 acres, most of it being *arabica*. The coffee area in Travancore appears to have been gradually going down. A virulent type of coffee blight in 1875 made the planters abandon coffee for tea. The elevation of the plantations ranges from 3,000 to 6,000 feet and the average rainfall is about 130 inches.

(iv) *Eastern slopes of the Western Ghats in Coimbatore, Salem and Madura Districts.*—Anaimalais in Coimbatore, Shevaroyas in Salem, and Kodaikanal and Palni Hills in Madura district have about 13 per cent of the total coffee area. Coffee from Shevaroyas and Anaimalais is considered to be next in quality to Nilgiris. Shevaroyas had its first coffee plantation in 1830 and Anaimalais in 1906.

Anaimalais get very heavy south-west monsoon, but the loose forest soil absorbs a lot of water. The Shevaroyas get less rain than Anaimalais but the soil is not so open. A good deal of clay is found mixed with loam. Palni, Dindigul and Periakulam do not even reckon 30 inches of rainfall in a year, and the elevation is not more than 3,000 feet. The coffee grown in these latter parts is considered to be somewhat indifferent in quality. Kodaikanal has almost the same rainfall as Shevaroyas and coffee is grown at higher elevations than the Palnis. On the whole, the rainfall is not so heavy as on the western

slopes of the Western Ghats, and the north-east monsoon is stronger than the south-west.

(v) *Lower elevations of the Western Ghats.*—Less than 10 per cent of the area under coffee is concentrated in the lower elevations in Coorg, Wynaad, Anaimalais, Palni and Mysore. *Robusta* thrives in these regions and the area under *robusta* seems to be increasing. In regions up to 2,000 feet above sea level it does better than *arabica* and in the border regions, *i.e.*, between 1,500 feet and 2,500 feet it is replacing *arabica*. *Robusta* has a much bigger root system and grows well on soils which are too poor for *arabica*. Being a sturdier plant than *arabica* it is more resistant to leaf-disease and stem-borers which are common in the lower elevations.

(d) *Scattered areas.*—There are about 6,000 acres of coffee outside the areas of concentration, 75 per cent of these being in Travancore State.

Travancore.—About 4,500 acres of *robusta* are spread out in small domestic holdings in the plains in the central and northern divisions of Travancore State. The average rainfall in this region is about 100 inches. Coffee is not systematically cultivated in these holdings and the method of preparation is also backward. Coffee from this area is considered inferior in quality.

Mysore.—The districts of Mysore and Shimoga have between them about 650 acres of *arabica*. A portion of the Billigirirangan Hills in Chamrajanagar taluk lies in Mysore district. Though the average rainfall in Chamrajanagar taluk is only about 30 inches the rainfall on Billigirirangan Hills is much higher. The coffee from this area is considered to be one of the best in India and generally gets a premium in the London market.

Assam.—About 100 acres of *arabica* coffee are grown in domestic holdings with betelnut, oranges, etc., in the Khasi and Jaintia Hills in Assam. The rainfall varies from 150 to 200 inches and the elevation ranges from 2,000 to 5,000 feet above sea-level. *Coffea khasiana* and *Jenkinsii* are reported to be indigenous in the Khasi and Jaintia Hills.

Central Provinces.—Chikalda and Kukru plateaux in the Central Provinces have about 90 acres of *arabica*.

Bihar.—The *arabica* plantations which belong to missionaries, as in the case of the Central Provinces, are about 20 acres in extent.

(e) *Fluctuations and trends.*—In the case of a perennial crop like coffee, violent fluctuations in the area from year to year are uncommon. In the last 28 years the area under coffee (excluding Travancore and Cochin States) fluctuated between 197,000 and 209,000 acres. It is understood that the total area under coffee was at its highest in 1896 when it reached about 304,000 acres which is about 100,000 acres more than what it is today. In recent years the acreage has, however, remained fairly steady as the following figures indicate :—

Year.	Acreage.
1909-10 to 1913-14	197,315
1924-25 to 1928-29	198,768
1929-30 to 1933-34	195,801
1934-35	199,527
1935-36	204,289
1936-37	205,822
1937-38	201,535

A slight upward tendency is noticeable ; the area rose from 197,000 acres before the 1914 War to about 204,000 acres in the triennium 1936-38. The following table gives the quinquennial average of the area reported under coffee in Madras, Coorg and Mysore.

Area in acres under coffee.

	1909-10 to 1913-14.	1919-20 to 1923-24.	1924-25 to 1928-29.	1929-30 to 1933-34.	1934-35.	1935-36.	1936-37.	1937-38.
Madras .	48,785	55,081	52,013	52,009	55,142	56,274	56,987	56,901
Coorg .	42,991	40,970	39,996	40,586	40,890	41,053	40,762	41,129
Mysore .	105,539	103,709	106,759	103,206	103,495	106,962	108,073	103,505
Total .	197,315	199,760	198,768	195,801	199,527	204,289	205,822	201,535

Compared with the pre-War (1914) level the area in Madras increased from 48,785 acres to 52,009 in 1929-30 to 1933-34. In 1937-38 it was 56,901 acres. The acreage in Mysore appears to have remained steady. The area in Coorg has gone down slightly. The total area in British India shows a slight upward tendency. Violent fluctuation in the reported area seems to be a common phenomenon in Travancore and Cochin as the following figures indicate :—

Years.	Travancore. (Acres).	Years.	Cochin. (Acres).
1910-11 . .	986	1911-12	2,725
1911-12 . .	10,457	1912-13	8,218
1912-13 . .	10,393	1913-14	2,509
1933-34 . .	907	..	..
1934-35 . .	5,043	..	..
1935-36 . .	6,268	..	..

The increase in area by about ten times in the course of a year i.e., from 1910-11 to 1911-12 in Travancore only serves to show the inaccuracy of the published statistics. The difference in the method of collection of these figures from year to year appears to account for their sudden rise and fall. It will be noticed that the coffee area in 1912-13 in Travancore was about 10,400 acres and in Cochin State about 8,200 acres. In both these States rubber and tea seem to have displaced coffee to a large extent.

(f) *Area available for cultivation.*—A large percentage of the area held by the planter is not under coffee. The proportion of cultivated area on small holdings is more than that on the larger ones. However, even under small holdings about 33 per cent of the land is not cultivated. The uncultivated area held by the planters in different coffee growing districts for 1935-36 is given in Appendix VI.

The uncultivated area on coffee estates is large in Cochin and Travancore and the Madras Presidency, being 71 per cent, 69 per cent and 64 per cent respectively, and is lowest in Mysore with 27 per cent. It is evident, therefore, that there is an extensive acreage which could be put under coffee cultivation by planters if an adequate market could be found for the produce.

(g) *Plucked and unplucked areas.*—Appendix VIII shows the area under coffee and the percentage of area plucked for the period 1931-32 to 1937-38 in respect of plantations above 5 acres in the different districts in the producing areas. During this period the percentage of the area plucked was highest in Coorg, *i.e.*, 96. About 91 per cent of the planted area in the Madras Presidency is plucked. The percentage of plucked area in Mysore is less, being only 84, and in Travancore it is reported to be about 81. In Cochin it is 87.0 per cent. Taking the whole of the coffee producing areas, the percentage of plucked to planted area is estimated at 88 in the lustrum ending 1936-37. The area not plucked consists of non-bearing trees under 5 years, plants infected with pest and diseases and vacancies caused by accidental falling of shade trees, by old age, etc.

(h) *Acreage and trend according to the size of holdings.*—In the absence of adequate statistics the compilation of area according to the size of the holdings has been difficult. Published details are not available. Information had to be extracted from local revenue records and other sources. It would appear that the size of holding has an influence not only on the quantity but also the quality of the crop. The method of cultivation and preparation for the market and the method of marketing tend to be backward on small holdings. Though the method of cultivation on account of lack of funds tends to be backward, the personal attention bestowed on small plantations neutralises to a certain extent, the effects of primitive methods on the yield of the crop. It was found, however, that almost the entire crop from small holdings was cherry-dried, thus lowering the market value of the crop so that the small holders naturally fair worse in regard to prices than their "big brothers".

Appendix VII gives the details of the number of plantations, the total area held, the area under coffee, etc. from 1931-32 to 1936-37. It analyses as under :—

	Holdings between 5 and 10 acres.	Holdings above 10 acres.
Number of plantations (Average) . . .	3,323	3,452
Total area held „ . . .	21,034 acres.	302,465 acres.
Total area under coffee „ . . .	13,980 „	168,950 „
Average area per plantation . . .	6.3 „	87.6 „
Area under coffee per plantation . . .	4.2 „	48.9 „
Percentage of area under coffee . . .	66	56

The number of coffee growers having holdings between 5 and 10 acres is nearly as high as that of those having plantations above 10 acres. The figures indicate the small size of the average coffee holding in India. Further, the smaller growers, it appears, have a higher proportion of their land under coffee and are, to that extent, more dependent on this particular crop for a living. The size limits, to a certain extent, the bargaining power of the planter as the resources of the small planter tend to be low. Further, the market charges of the small planter become proportionately high as the quantity involved is small. It will, therefore, seem to be in the interest of the small producers to overcome these disabilities by pooling their resources for marketing their produce.

It may be of interest here to compare the position in some other countries. In Colombia, for example, which is one of the biggest producer of "mild" coffee, the plantations as a rule run small. The major part of the coffee harvest comes from small estates of 15 to 20 acres. Little or no paid labour is said to

be employed. In Costa Rica, the major part of the crop is provided by small farms. This is prepared for the market by the bigger estates in the neighbourhood, who sell the coffee to the "beneficador" who cures, grades, mixes and puts his own mark. In Kenya also the estates are small and scattered. In each of these cases, however, it is found possible to put on the market a fairly uniform and standard quality product.

On the basis of the figures given in the Agricultural Statistics of India and Indian Coffee Statistics, the area under small plantations of 10 acres and below appears to have dropped considerably, while the area under bigger holdings shows an increase during the last 18 years. The reliability of these statistics has already been discussed. But as there is nothing better for purposes of tracing the trend, one is necessarily forced to fall back on the following figures :—

Years.	Area below 10 acres.*	Area above 10 acres.*	Total.*
Average 1919-20 to 1923-24	76,113	123,647	199,760
Average 1924-25 to 1928-29	49,799	148,969	198,768
Average 1929-30 to 1933-34	35,471	160,330	195,801
1934-35	29,912	169,615	199,527
1935-36	33,309	170,980	204,289
1936-37	33,304	172,518	205,822
1937-38	39,017	162,518	201,535

According to the above the area under plantations above 10 acres rose from 62 per cent of the total area in the lustrum ending 1923-24 to 75 per cent in the next lustrum and to 82 per cent in the lustrum following. It rose to 85 per cent in 1934-35 and in 1935-36, 1936-37 and 1937-38, it remained fairly steady at 84, 84 and 80 per cent respectively. While the holdings above 10 acres increased by about 29 per cent, the holdings below 10 acres fell by about 53 per cent during the same period. The area below 10 acres dropped from 38 per cent of the total average area in 1919-20 to 1923-24 to 25 per cent in the next quinquennium and 18 per cent in 1929-30 to 1933-34 and further dropped to 15.5 per cent in 1934-35 and remained at just over 16 per cent in 1935-36 and 1936-37 and 20 per cent in 1937-38. From these figures it would appear that the acreage of small holdings (area below 10 acres) has dwindled by more than half while the area under larger plantations has increased by about a quarter in the course of the last 30 years. It will also seem that the financial strain consequent on the fall in prices has been responsible for wiping out many of the weaker producers and causing considerable hardship to the smaller growers.

The figures in Appendix IX indicate the position in the Madras Presidency, Coorg and Mysore State. The big drop in the acreage of plantations below 5 acres in 1933-34 in Mysore is probably due more to the inaccuracy of Mysore statistics than to any actual fall. While the area below 5 acres is the highest in Madras, the area between 5 and 10 acres is the largest in Mysore State.

Plantations under 5 acres form about 23 per cent of the total area in the Madras Presidency for the period 1932-33 to 1936-37, while plantations below 10 acres form about 28 per cent of the total. Coorg has only about 4.5 per cent of the area under plantations below 5 acres and about 7 per cent under 10 acres. Mysore has only about 4.6 per cent of the total area under planta-

* Figures for Travancore and Cochin States are not included as they are altogether inaccurate

tions below 5 acres, while plantations below 10 acres form about 14 per cent of the total area. It is evident from these figures that the problem of the small producer is of primary importance in Madras, Travancore and Cochin (see later) and relatively less so in other area as a whole, although in certain districts the problem remains one of outstanding importance.

Mysore.—Detailed statistics of acreage under coffee on the basis of size of holdings were collected from the official records for 1933-34. The following indicates the position :—

Size of holdings in Mysore—1933-34.

Group.	Percentage of area to total.	Percentage of No. of holdings to total.	No. of holdings.
1—25 acres	18·1	83·3	2,907
26—50 „	8·2	6·4	224
51—100 „	16·4	5·0	174
101—250 „	28·8	3·9	136
251—500 „	12·9	0·9	32
Above 500 „	15·6	0·5	18

While there are only 18 holdings above 500 acres, there are 2,907 holdings, *i.e.*, 83 per cent of the total number under 25 acres.

The following table indicates the percentage of different sizes of holdings in each taluk in Mysore State :—

Percentage of different sizes of holdings in Mysore State.

Taluks.	1—25 acres.	26—50 acres.	51—100 acres.	101—250 acres.	251—500 acres.	Above 500 acres.
	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent
Chikmagalur . .	20·1	8·2	20·9	35·5	11·1	4·0
Mudigere . .	18·9	12·2	20·6	31·2	10·4	6·7
Koppa . .	0·7	1·4	5·9	41·6	26·3	24·1
Tarikere . .	0·9	0·7	6·4	7·2	21·2	63·6
Sakalespur . .	17·4	8·3	13·0	22·8	14·7	23·8
Belur . .	37·6	11·0	14·4	8·6	4·2	24·2

Chikmagalur and Belur taluks have the largest number of small holdings, *e.g.*, 37·6 per cent of the area in Belur and 20·1 per cent in Chikmagalur are under 25 acres. The problems relating to preparation and marketing of coffee by the small planters obviously require more attention in Chikmagalur, Belur and Mudigere than in other parts of the State.

Travancore.—Investigation in the course of the marketing survey showed that the area in Travancore State may be roughly divided into the following groups :—

Size of holdings in Travancore State.

Group.	Number of holdings.	Area. (Acres).	Average area per plantation. (Acres).
1—10 acres . . .	Not available.	4,500 (approximate).	..
11—25 „ . . .	7	115	16.4
26—50 „ . . .	1	50	50.0
51—100 „ . . .	Nil	..	..
101—250 „ . . .	Nil	..	..
251—500 „ . . .	Nil	..	..
Above 500 „ . . .	1	600	600.0

The small domestic holding is a feature of coffee industry in Travancore ; a few coffee plants among the banana and jack trees are a common phenomena. The main marketing problems, therefore, are those of the small planter.

Cochin.—According to investigations in the course of the marketing survey the holdings in Cochin State may be sized as under :—

Size of holdings in Cochin State.

Group.	Number of holdings.	Area. (Acres).	Average area per plantation. (Acres).
1—10 acres . . .	200	25	0.1
11—25 „ . . .	Nil	..	..
26—50 „ . . .	1	30	30
51—100 „ . . .	2	154	77
101—500 „ . . .	4	916	229
Above 500 „ . . .	1	556	556
Total . . .	208	1,681	8.0

About half the area is in holdings of 101 to 500 acres.

Coorg.—Coorg, according to the available statistics, has only about 133 holdings between 5 and 10 acres covering about 750 acres. The number of plantations above 10 acres is estimated to be about 1,000.

Madras.—Madras has only about 1,014 holdings above 5 acres and the important position of the small planters has already been remarked. Information regarding the size of holdings collected for particular areas, however,

emphasises the need for examining coffee marketing problems on a district-wise basis. Each district appears to have distinctive characteristics. The following, for example, are the details of the coffee area in Salem district :—

Size of holdings in Salem district.

Group.	Number of plantations.	Total area (Acres).	Average area per plantation. (Acres.)	Percentage of the total area.
5—10 acres	11	109	9.9	1.2
11—50 "	12	398	33.2	4.5
51—100 "	15	1,137	75.8	12.9
101—250 "	33	5,139	155.7	58.3
251—500 "	4	1,504	376.0	17.1
Above 500 "	1	520	520.0	6.0
Total	76	8,807	116.0	100.0

As in Mysore, the largest percentage of the area consists of plantations between 100 to 250 acres. Holdings below 50 acres are relatively much smaller in number than in Mysore, Cochin and Travancore.

The following table indicates the size of holdings in Anaimalais in Coimbatore district :—

Size of holdings in Anaimalais.

Group.	No. of plantations.	Area. (Acres.)	Average area per planta- tion. (Acres.)
1—10 acres	Nil	..	..
11—50 "	1	29.0	29.0
51—100 "	1	55.0	55.0
101—250 "	5	831.3	166.2
251—500 "	1	395.9	395.9
Above 500 "	2	1,069.9	534.9
Total	10	2,381.1	238.1

The largest concentrated area is in plantations above 500 acres. These figures do not, however, include Indian owned plantations which, it is claimed, are few in number.

The sizes of holdings in Wynaad are as under :—

Size of holdings in Wynaad.

Group.	No. of plantations.	Area (Acres).	Average area per plantation. (Acres).	Percentage to total area.
5—10 acres	13	94	7.2	2.6
11—50 "	27	858	31.0	23.6
51—100 "	13	918	70.6	25.2
101—250 "	4	1,767	441.7	48.6
Total	57	3,637	64.0	100

Nearly half the acreage is in plantations above 100 acres. The small holdings form a small proportion of the total area.

The following are the sizes of holdings in Madura district :—

Size of holdings in Madura district.

Group.	Dindigul			Nilakottal.			Kodalkanal.			Periakulam.		
	Number of plantations.	Average area per plantation.	Total area.	Number of plantations.	Average area per plantation.	Total area.	Number of plantations.	Average area per plantation.	Total area.	Number of plantations.	Average area per plantation.	Total area.
		Acres	Acres		Acres	Acres		Acres	Acres		Acres	Acres
5— 10 acres .	24	10	240	2	10	20	1	10	10	2	10	20
11— 50 „ .	43	20·16	867	18	17·16	309	36	17·0	644	32	19·3	618
51—100 „ .	1	...	60	...	...	...	5	68·8	344	2	74·5	149
101—250 „ .	...	...	...	1	...	123	5	159·4	797	2	107·5	215
251—800 „ .	2	309·5	619	...	...	...	1	...	263	...	...	...
Above 800 „ .	...	...	...	1	...	668	...	...	...	...	...	...

The acreage between holdings of 11 to 50 acres is about 41 per cent of the total. More than 45 per cent of the acreage is found in holdings below 50 acres.

(i) *General characteristics of different species and their areas*—*Arabica*.—*C. arabica** is the most widely cultivated species. It flourishes on elevations between 2,500 and 5,000 feet above sea level and is grown under fairly heavy shade. The yield ranges from $\frac{1}{2}$ lb. to 8 lb. per tree and from 100 to 1,200 lb. per acre. Many types of *arabica* appear to have been tried from time to time in different areas.

“*Chik*” deriving its name from Chikmagalur, in Mysore State, was one of the first in the field and was flourishing till about 1870. Constant attacks of borer and *hemileia*† spread through the coffee plantations about 1870 and led to its practical extinction. The “*Chik*” variety descending from seeds which Bababudan brought, does not seem to have survived more than 35 years after regular plantations were started. At present, a few acres on Bababudan Hills remain and a few plants are scattered in other districts. The plant was mainly characterised by an upward tendency of the primary branches. The London trade still gives a premium on “*Old Chik*”. It is difficult to state anything about its colour as an examination of the latest report from London about the Indian shipments showed that different consignments from one estate differed considerably in colour. Thus an estate reputed for its number of “*Old Chiks*” had blue, greenish and greyish beans in seven successive shipments. The “*Chik*” beans are large and round and have a reputation for their liquoring quality.

* Malabar in the Madras Presidency is said to have given *arabica* to Dutch East Indies. The first plants were taken to Java in 1696. It is also claimed that Brazil, the biggest coffee producing country of the world, had its seed in the first instance from Malabar in 1760.

† *Hemileia vastatrix* is a fungus leaf disease.

Coorgs.—In 1870, a Mysore planter, Mr. Stanely Jupp replaced the “Chik” with Coorg seed. They were said to have been selected from plantings of “Chiks” at Nalkanad in Coorg. Almost the whole of Mysore area was replanted with this seed. “Coorgs” were found to be good and resistant to “borer” attack. They represent most of the older coffee in South India. This variety differs from the “Chik” inasmuch as there is a tendency of the primary branches to run out at right angles from the stem or to droop slightly. The beans are longer and more flat than “Chiks”. Regarding the colour of the beans as in the case of “Chik” it is difficult to dogmatise. Consignments from an estate mainly planted with “Coorgs” had bluish and greenish beans in five successive shipments. The tendency on the whole may be said to be more greenish than bluish.

Kents.—The “Kents” were said to have been selected from plantings of “Coorgs” between Mudigere and Chikmagalur (see plate facing page 18). The first seed is said to have been taken from a specially healthy and good cropping tree in 1911. Only 16 plants appear to have been selected. As stated by Mr. E. G. Windle in his book, “Modern Coffee Planting”, in the second generation, 30 per cent of the seed was true to type, in the third 60 per cent and in the fourth 90 per cent. The Coffee Scientific Officer of the United Planters’ Association has stated that an inspection of any area under this variety shows that it is in no sense “pure bred”. It is characterised by slight difference in habit, mainly the distribution of secondary growth on primaries. Otherwise it shows resemblances to the “Old Chik” and “Coorgs”. It is now grown fairly generally all over Mysore, Coorg and Nilgiris and is the main variety used for filling vacancies and planting new areas. The “borer” makes it necessary continuously to replace dead plants and the “Kents” variety which is more resistant to *hemeleia* is slowly replacing the “Coorgs”.

The “Kent” beans are rounder and bolder than “Coorg” and are slightly greyish in colour, probably due to the adhering silver skin. It is a good cropper, of vigorous growth. On well run estates on good land the yield is from 4 to 6 cwt. an acre.

Other arabicas.—Seeds from Brazil, Venezuela, Costa Rica and Jamaica were tried with little or no success in Mysore, Nilgiri, Coorg and other coffee areas. Planters also tried Maragogipe and Bourbon. Maragogipe was found to be an uncertain bearer and Bourbon was smaller and of poor quality. *C. arabica amaralla* or Golden drop characterised by orange yellow fruits were also tried. “Jacksons hybrid” was selected from a “Coorg” plant. It was said to be successful in the original plantings (in north Coorg) of Mr. Jackson but did not prosper in other areas. A little planting has been done in Coorg with Browne’s “Netracondah” hybrid. It is a strong grower but poor cropper.

C. robusta was introduced from Java from 1910 onwards at various times. It is grown in elevations ranging from 1,000 to 2,000 feet above sea level. Its resistance to disease and pests and its prolific yield are making it more popular with small planters. The cost of production is less than that for *arabica* which is another attraction to growers. The average yield is about 4 to 6 cwt. per acre. The beans are usually small and round. There are 5 or 6 types of *robusta* commonly grown. Plate facing page 19 shows a *robusta* coffee plant. A strain from Peridenya in Ceylon is ranked best. *Robusta* does not possess the cup qualities of *arabica*. *Robusta* generally blossoms shortly after February. The fruits ripen more slowly than *arabica* and so it comes to

the market later than *arabica*. The ripe berries stick on the branch for a longer time than those of *arabica*. The clusters of *robusta* beans are nearly three times the size of those of *arabica*. *Robusta* appears to be an heterogeneous species as regards shape of the beans. It is possible that the types planted in recent years have been selected consciously or unconsciously for bean shape. It is said that the *robusta* beans from some estates are, therefore, found to be approximating to the shape of *arabica*. *Robusta* peaberry is usually more pointed at the ends than *arabica* and the colour is also slightly different. The silver skin sticks to the berry much more strongly than in *arabica* and is almost always rather browner than that of *arabica* even if the former is prepared by pulping and fermentation ("wet" method).

C. liberica is a larger and sturdier plant than *C. arabica* and *C. robusta* (see plate facing this page). It is vigorous in growth, disease-resistant and a good cropper; it has a very large bean with a pronounced flavour. The aroma is not pleasant. The area under *liberica* is negligible, most of it being in Travancore and Mysore. *Excelsa* which is a variety of *liberica* is being tried in some estates in Koppa taluk in Mysore State.

Liberica-arabica hybrids are not popular due to the high degree of sterility shown in the blossoms. Bean abnormality, e.g., 3 beans per fruit, elephants, empty beans and polyembryony, was common.

Estimated areas under different species.—There is no published data of acreage under these different species of coffee in India. It would seem desirable to have such statistics. Detailed enquiries were made to find out the approximate acreage under *arabica*, *robusta* and *liberica* coffees and the following are the estimated figures:—

Estimated area (acres)—1937-38.

	<i>Arabica.</i>	<i>Robusta.</i>	<i>Liberica.</i>
Madras	50,900	6,000	Negligible.
Coorg	34,100	7,000	Do.
Mysore	101,450	2,000	50
Travancore	1,000	4,400	Negligible.
Cochin	1,700	370	Nil.
Other parts	220	Nil.	Nil.
Total	189,370	19,770	50

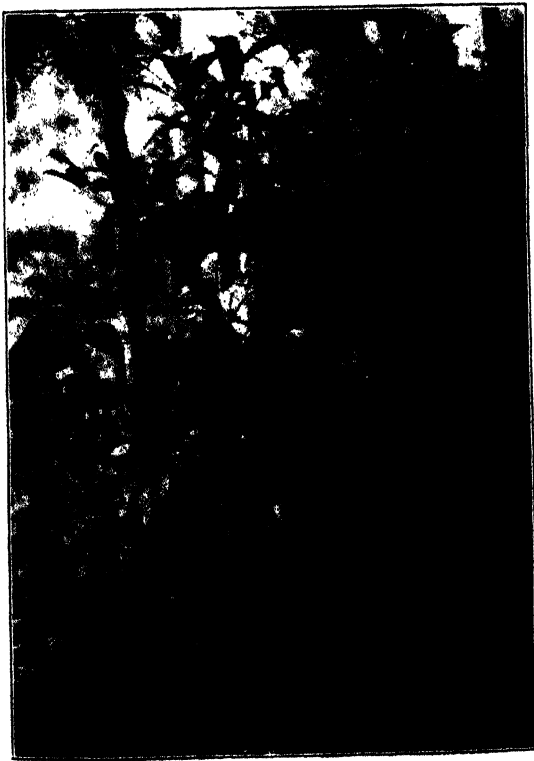
About 90 per cent of the total area in India is under *arabica* and about 10 per cent under *robusta*. The area under *liberica* is negligible.

Madras.—About 89 per cent of the area in Madras is under *arabica* and 11 per cent under *robusta*. Wynaad, in Malabar, accounts for about 57 per cent of the total *robusta* area in the presidency where it seems to be gaining ground. Shevaroyas and Nilgiris have practically no *robusta*. Kodaikanal and Palni Hills, in Madura district, have between themselves about 2,000 acres under *robusta*.

Coorg.—According to a recent survey it was observed that the area under *robusta* is rapidly increasing and was estimated at 30 per cent of the total. However, investigations in connection with the marketing survey indicated only an acreage of about 7,000 which amounts to about 17 per cent of the total area. The oldest *robusta* plantation in Coorg is said to be under 30 years. Insect pests and fungus diseases appear to be mainly responsible for replacing *arabica* by *robusta*. Pollibetta, Siddapur and Kutta districts have the largest percentage of *robusta*. In Kutta, it is grown on new clearings, while in Pollibetta and Siddapur, it is being put in as "supplies" in places where *arabica* is a failure. The practice of regular inter-planting of *robusta* coffee of good



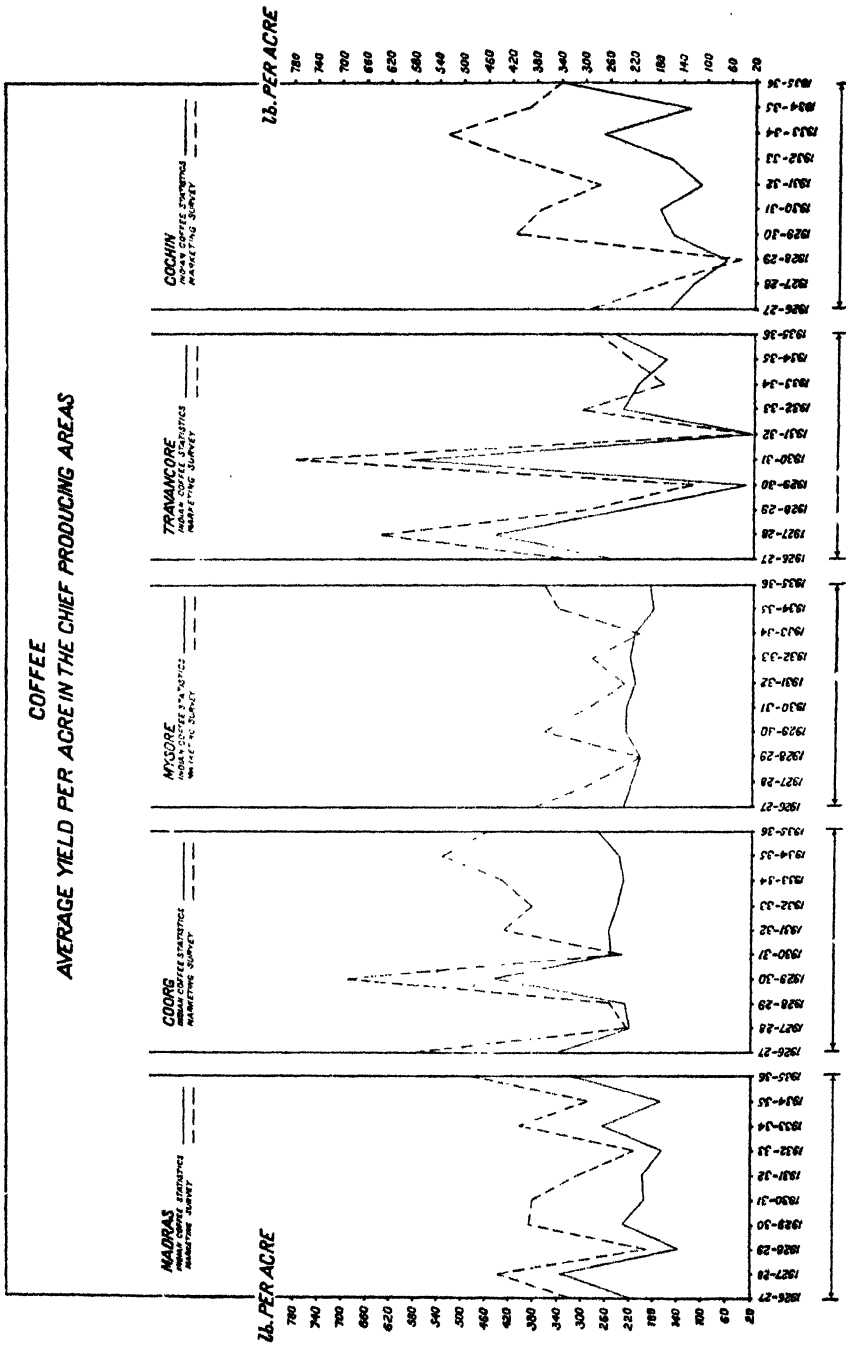
COFFEE BERRIES.



LIBERICA COFFEE PLANT.



COFFEE IN BLOSSOM.



strain with orange plants is getting popular. The grafting of *arabica* on *robusta* stock is also being tried on a plantation scale in Coorg. Young seedlings of the same age of these two species are united by approach grafting in the nursery. Plate facing page 30 shows a coffee plant in blossom.

Mysore State.—The area under *robusta* in Mysore is about 2,000 acres. As there are few estates in Mysore below 2,000 feet sea level, the area under *robusta* is small. *Excelsa*, a vigorous disease-resisting coffee of the *liberica* species, is being grown in some estates in Koppa taluk on a very small experimental scale.

Cochin.—As in other places, Cochin favours *arabica* variety but 18 per cent of the area is under *robusta*, most of which is in scattered holdings.

Travancore.—Travancore has comparatively a large *robusta* area consisting of about 4,400 acres as against 1,000 of *arabica*. The bulk of the *arabica* area was planted about thirty years ago, while *robusta* was taken up only in the last decade. *Robusta* is cultivated as a garden crop around the dwelling houses in most of the taluks in the Central and Northern Division of the State; plants varying from 10 to 200 in number are grown in among coconut, banana, mango and jack trees (see plate facing page 19). There is, however, a gradual fall in the area under *robusta*. It appears that the belief that coffee plants are detrimental to the growth of other trees and also the unremunerative nature of coffee cultivation are responsible for the fall. No official records of the small acreages are available but enquiries showed that the area under *robusta* was about 5,000 acres a few years ago, while now it is 4,400 acres.

A few scattered plants of *liberica* coffee are to be found in Central Travancore. They are locally known as "*perum kappi*" meaning large coffee.

Other areas.—The coffee area in the Central Provinces, Assam, Bihar and the United Provinces is all under *arabica* varieties.

(j) *Percentage of area in age groups*.—The longevity of a coffee plant depends upon various circumstances but the life of a coffee plant is claimed to be about the same as that of a man. The coffee tree lives longer in higher elevations where it is less subject to pests and diseases than in lower elevations, and may, it is said, live to a ripe old age of 80 to 90 years. In Brazil, it is stated that trees of 30-35 years are left out when valuing a plantation. The percentage of the area under different age groups is not available in any published statistics. In view of certain allegations that Indian coffee was suffering from aging detailed enquiries were conducted for estimating the area under age groups. These enquiries showed that it is difficult to get any precise information about age groups as in areas where the "borer" and stump-rot had played havoc, the "refills" due to vacancies were numerous resulting in a complete mixture of plants under different ages. In a considerable number of estates it was found that half the number of plants are replaced by the time the first plants are 30 or 40 years old. Enquiries at borer affected estates showed that, on an average, about 8 to 10 per cent of the trees have to be removed and burnt every year. In normal plantations, the replacement is said to be about 5 per cent. In the higher elevations, it may be estimated that not more than 3 per cent of the area is under 5 years of age.

The average replacement due to pest and disease, vacancies caused by old age, the fall of shade trees and other casualties amounts to about 7 per cent of the total number of trees. It was found that new planting every year including replanting of areas abandoned in the previous years amounted to about 3 per cent of the area. It may, therefore, be estimated that about 10 per cent of the total number of trees is always under 5 years. It was found

difficult to ascertain the rest of the age groups. Information received from typical estates in the different coffee areas supplemented by personal investigation in the course of the marketing survey showed that the following proportion of area under different age groups may be estimated :—

Estimated proportion of area under age groups.

	Per cent
Under 5 years	10
5 to 10 years	8
10 to 30 years	40
30 to 60 years	20
60 years and above	22

In Travancore, the position is different as a large acreage under *robusta* has been planted recently. About three-fourths of the coffee plants in Travancore are consequently between 5 and 10 years of age. The acreage under the following age groups may be approximately stated as under :—

Estimated area (in acres) under age groups.

	Madras.	Coorg.	Mysore.	Travancore.	Cochin.
Below 5 years	5,500	4,100	10,500	600	280
5 to 10 years	4,400	3,280	8,400	3,500	230
10 to 30 years	22,000	16,400	42,000	1,000	1,120
30 to 60 years	11,000	8,200	21,000	200	560
Above 60 years	12,100	9,020	23,100	300	620
Total	55,000	41,000	105,000	5,600	2,810

Except in Travancore about 45 per cent of the trees are above 30 years of age. The largest number is between 10 and 30 years which is the period of best yield.

(2) PRODUCTION.

(a) *Method of collection of published figures.*—The published statistics of production are collected in the same way as those relating to the acreage of plantations below 5 acres. They are based on information furnished by the planters on standardised forms. Production of plantations between 5 and 10 acres were included in these forms from 1931-32. Before 1931-32, only production of plantations above 10 acres was published. Therefore, as in the case of acreage, statistics of production given in the Indian Coffee Statistics after 1931-32 are not comparable with those published before. Production figures of “Parchment”* otherwise called “Plantation” coffee and of “Cherry-dried”* are supplied by planters in terms of bushels. The bushel figures are converted into tons on the basis of a fixed formula viz., 95 bushels† of “Parchment” and 140 bushels of “Cherry-dried” to a ton. Unlike other agricultural products, production figures are not calculated on the basis of standard normal yield. The

* “Parchment” coffee is coffee prepared in parchment form by the “wet” method and “Cherry-dried” coffee is coffee dried in the cherry and hulled, i.e., prepared by the dry method.

† A bushel is a measure of capacity used for measuring grains, seeds, etc.

average annual yield per acre is computed from the total yield which is supplied by the planters in the forms mentioned above. Official statistics of production are even more incomplete and inaccurate than those of acreage. While an attempt is made to collect total acreage figures every year through the local revenue staff, production of plantations below 5 acres is entirely omitted from the published figures for production. A considerable quantity of coffee is, therefore, continuously left out of reckoning. The estimated production of such plantations is about 37,000 cwt. which is about 12 per cent of the total production as given in the published statistics.

Besides the big gap in figures mentioned above, even the published statistics of production for the areas, which are given, appear to be inaccurate. Intensive enquiries in the course of the marketing survey indicated that the average yield per acre is much higher than the official figure. Statements received from plantations covering about 30,000 acres in the different coffee districts and interviews with representative growers having large and small holdings showed a great divergence between official statistics and the actual production. The production figures as given in Indian coffee statistics are 46 per cent less than the estimated production based on marketing enquiries. The net available supply in India is, therefore, much more than what it is presumed to be by the trade. The consumption figures in the producing areas, worked out on the basis of official figures also go to show the unreliability of these statistics. It is well known that the coffee drinking habit in Madras, Coorg and Mysore is pronounced and that the average middle class homes in these areas cannot do without their morning and afternoon cups of coffee. On the basis of official figures, the annual *per capita* consumption in Madras works out to 0.24 lb. presuming that Mysore and Coorg sent out the entire production leaving nothing for home consumption. That the figures of production, as given in the published statistics, are considerably less than the actuals is further proved by checking figures of production, imports and exports and net available supply in particular areas. Investigation made in Mysore elucidates this point. For getting the figures of road traffic, the lorry check books maintained by the Police Department were gone through. The capacity and the number of the lorries plying between Mangalore and Mysore were also ascertained from the Police Department in Mysore State and the British territory. The average carrying capacity worked out to about 2½ tons per lorry. It appeared that the lorries were invariably over-loaded, very often nearly to the extent of double the carrying capacity. During the season 1935-36, 3,058 lorries appear to have taken coffee from Mysore into Mangalore. Besides a small quantity of coffee also finds its way to Mangalore in country carts. On the basis of a net weight of 2½ tons clean coffee per lorry the figures work out as under :—

	Cwt.
Production according to official statistics, 1935-36	151,673
Imports by rail, 1935-36	7,690
Estimated imports by road, 1935-36. (Imports from Mangalore and Coorg)	15,000
Total gross supplies	174,363
Exports by rail, 1935-36	18,299
Estimated exports by road, 1935-36	152,900
Quantity retained by growers	5,000
Total	176,199
Excess	1,836

Even if Mysore does not consume a bean of coffee the published figures of production are short by about 2,000 cwt. as the exports are in excess of supply by about 2,000 cwt. Mysore is one of the best coffee consuming areas in India and the *per capita* consumption is easily more than 1.5 lb. on the basis of conservative estimates. It may, therefore, be stated that more than 90,000 cwt. have been left out of reckoning in 1935-36. The margin of error is about 38 per cent on the basis of actuals.

That the published figures of production are definitely under-estimates is further proved by the fact that the net exports from Mangalore and Tellicherry by sea and rail and from Mysore by rail are more than the official statistics of production in Mysore and Coorg. The production of Mysore and Coorg goes to Mangalore and Tellicherry for curing and marketing. The following figures indicate the position :—

	1934-35. (Cwt.)	1935-36. (Cwt.)
Exports to foreign countries from Mangalore and Tellicherry	125,346	184,308
Coastal exports from Mangalore and Tellicherry	16,781	18,353
Exports by rail from Mangalore and Tellicherry	76,780	39,133
Excess of exports over imports by rail from Mysore.	1,442	10,609
Estimated quantity retained by growers in Mysore and Coorg	7,000	7,000
	227,349	259,403
Published figures of production in Mysore and Coorg	223,946	245,216
Excess over production	3,403	14,187

The above figures do not take into account the consumption of coffee in Mysore, Coorg, South Canara and North Malabar. It is seen that the supply was short of even exports by 3,403 cwt. in 1934-35 and by 14,187 cwt. in 1935-36.

The following figures of production and exports at Kodaikanal further prove that the published production figures are far short of the actuals :—

	1934-35. Cwt.
Despatches by rail	3,593
Estimated despatches by road	800
Estimated quantity retained by growers	50
Total	4,443
Production according to official statistics	3,127
Not accounted for	1,316

The margin of error is about 30 per cent reckoned on the basis of actuals.

(b) *Yield per acre.*—(i) *Average yield per acre.*—The yield of any species of coffee depends on several factors such as, elevation, size, intensity, timing of the rainfall, shade, pruning, manuring and spraying. Marketing enquiries showed that the actual average yield per acre is much higher than what is given in the published statistics. Appendix X shows the differences between

the official* figures and the marketing survey figures from 1926-27 to 1935-36. The official figures of average yield per acre are computed from total production and therefore, when the production figures are inaccurate the average yield per acre worked out on the basis of these figures will necessarily also be inaccurate. Published statistics give average yield per acre for the planted as well as the plucked areas. Investigations showed that the average yield in plantations below 10 acres, which consist mostly of domestic holdings, is less than that in the larger ones. In the case of small domestic holdings, coffee is grown as a subsidiary crop and the growers do not pay much attention to the cultivation. The official figures† of average yield for plantations below 10 acres for the last 6 years for different areas are as under :—

Average yield for plantations below 10 acres.

	lb.
Madras	125
Mysore	167
Coorg	128

As there are about 37,000 acres of coffee in plantations below 10 acres (including Travancore and Cochin States), the problem of focussing the growers' attention on good cultivation deserves to be considered. Marketing enquiries showed that the average yield in plantations between 10 and 50 acres is not, in fact, less than that in the larger ones.

The average yield per acre in India does not compare favourably with those of some of the chief coffee producing countries of the world. It has, however, to be observed that different types of *arabica* coffee are grown in the different parts. Even on the basis of estimated production the average yield in India is only 312 lb., while according to the published statistics it is still less, being 191 lb. per acre for the plucked area. The following table gives the average yield in some of the chief producing countries :—

Average yield per acre in the chief producing countries.

	lb.
Brazil	500
Colombia	600
Costa Rica	500
Guatemala	480
Dutch East Indies (<i>robusta</i>)	450
British East Africa	400
India	312 (<i>estimated</i>)

Appendix X and the diagram facing page 31 show the average yield per acre according to published statistics and marketing survey estimates. This will serve to show the difference between the two sets of figures. Ways and means of improving the yield without sacrificing quality should engage the attention of the industry, as it would reduce the cost of production per cwt. and at the same time give better returns to the planters. In the course of the marketing survey, figures of the yield per acre kept by the local officials were scrutinised and they only served to show the unreliability of the published

* Indian Coffee Statistics.

† Based on the returns from the planters.

statistics. On the Shevaroyis, in the Salem district, the average yield per acre for 1931-32 to 1935-36 according to the Indian Coffee Statistics was 297 lb., while according to marketing investigation it was 405 lb.

(ii) *Average yield according to size of holdings.*—Figures of average yield of *arabica* as reported by local officials according to size of holdings were collected from some of the producing areas. They further go to confirm the unreliability of these statistics. The following table gives the yield per acre on the Shevaroyis in Salem :—

Average yield (in lb. per acre) according to size of holdings on Shevaroyis.

	1933.	1934.	1935.	1936.	1937.	Average. 1933-37
Estates of 5—10 acres .	146	104	64	87	95	99
Estates of 11—50 acres .	124	305	118	319	117	197
Estates of 51—100 acres .	87	291	198	428	92	219
Estates of 101—250 acres .	180	403	255	698	109	329
Estates of 251—500 acres .	136	275	283	547	253	299
Estates of above 500 acres .	110	178	384	502	97	254

According to these statistics the maximum yield was in plantations between 101 and 250 acres and the lowest yield in the holdings between 5 and 10 acres. The difference in yield between these two types of holdings is as much as 230 lb. per acre.

The average yield in Madura district according to the local official records was as under :—

Average yield (in lb. per acre).

	1932-33.	1933-34.	1934-35.	1935-36.	1936-37.
Plantations between 5—10 acres.	60	108	96	104	87
Plantations above 10 acres.	87	90	107	120	81

There appears to be no appreciable difference between the yield of plantations above 10 acres and below 10 acres in the Madura district.

In Wynaad, in Malabar, the local official records showed the yield of *robusta* as under :—

Average yield (in lb. per acre) of robusta in Wynaad.

	1932-33.	1933-34.	1934-35.	1935-36.	1936-37.
Up to 10 acres . . .	34	17	35	52	65
11—50 acres . . .	47	57	40	86	103
51—100 acres . . .	80	142	92	114	134
101—500 acres . . .	57	127	74	80	91

Marketing survey investigations showed that the yield of *robusta* is from 300 to 450 lb. in Wynaad.

(iii) *Variations in yield.*—The average yield of coffee per acre varies appreciably from year to year, district to district and even from estate to estate situated in contiguous blocks lying in the same zone and subject to the same natural conditions. The published statistics show the following differences in yield for the period given :—

Average yield (in. lb. per acre).

	Madras.	Coorg.	Mysore.	Travancore.	Cochin.
1931-32	197	258	217	29	109
1932-33	166	244	224	238	157
1933-34	266	235	198	213	270
1934-35	168	241	187	167	126
1935-36	318	278	192	251	333
1936-37	192	302	168	181	232

In 1931-32, while the yield in Travancore was 29 lb. per acre it was given as 258 lb. in Coorg. Marketing investigations showed the following variations in yield from year to year in a few estates :—

Variations in average yield (in lb. per acre).

	Estate A.	Estate B.	Estate C.
1926-27	280	481	41
1927-28	672	840	568
1928-29	45	190	28
1929-30	390	604	183
1930-31	392	571	284
1931-32	140	571	59
1932-33	268	626	468
1933-34	84	414	125
1934-35	336	626	125
1935-36	196	896	625

The variation in yield was as much as 568 lb. per acre in one year and 28 lb. the next year, a fall of nearly 95 per cent. However, the rise and fall in supply is not so sharp as the above figures indicate inasmuch as the fall in one area is compensated by a rise in another area. The variations in yield between plantations situated in contiguous blocks were as under :—

Variations in yield (in lb. per acre).

Estate A	56
Estate B	414
Estate C	84
Estate D	204
Estate E	336

It ranged from 56 lb. to 414 lb. per acre. A more uniform and intensive cultivation among neighbouring estates should serve to minimise the differences in yield and also to increase the yield.

(iv) *Yield according to age groups.*—Investigations in India have shown, says the 19th report of the Imperial Economic Committee, that 60 to 70 per cent. of the crop is often borne by 20 per cent. of the total number of trees in an average acre. Detailed investigations were made into the age of the trees and as mentioned before it showed that about 42 per cent. of the trees are over 30 years and 10 per cent. under 5 years. Most of the crop is usually collected from the remaining 48 per cent. Mr. Anstead* says, "1,200 trees per acre need only ripen 140 berries on each bush to yield 1 cwt. of coffee per acre. Many trees get exhausted in about 10 or 12 years due to unskilful treatment." It was found difficult to get an estimate of average yield according to age groups as during picking the whole pick of the day is lumped together. But it may be stated that plantations below 3 years do not yield anything.

Information collected from various sources in the course of the enquiry showed the average yield as under :—

Average yield (in lb. per acre) according to age groups.

Below 3 years	Nil
3 to 5 years	Negligible
5 to 10 years	280
10 to 30 years	443
30 to 60 years	392
Above 60 years	150

Increasing returns start from the 10th year and decreasing returns from the 30th year. The highest yield is when the plant is between 10 to 30 years of age.

(v) *Yields of different species.*—According to marketing investigations the yields of different species of coffee also vary considerably. *Robusta* yields more prolifically than *arabica*. The average yields of *arabica* and *robusta* grown on the same estate are given below :—

Average yield (in lb. per acre) of arabica and robusta.

	<i>Arabica.</i>	<i>Robusta.</i>
1932-33	198	474
1933-34	278	403
1934-35	188	567
1935-36	202	367
Average	217	453

The yield of *robusta* in this plantation was double that of *arabica*. According to marketing investigations the average yield per acre of *arabica* is about 300 lb., while that of *robusta* is about 400 lb.

* Scientific Officer, U. P. A. S. I. and later Deputy Director and Director of Agriculture, Madras.

(c) *Total production.*—Appendix XI gives the area under and production of coffee according to published statistics and marketing survey estimates.

The following indicates the difference between the published figures and corrected estimates :—

Average annual production for the period 1932-33 to 1936-37.

	Below 5 acres. Esti- mates.	Between 5 and 10 acres. Published statistics.	Above 10 acres.		Total.	
			Published statistics.	Corrected esti- mates.	Published statistics.	Corrected esti- mates.
Madras . . .	14,200	3,101	74,522	122,070	77,623	139,371
Coorg . . .	2,354	1,107	85,580	151,324	86,687	154,785
Mysore . . .	5,540	15,344	128,948	242,490	144,292	263,374
Travancore . .	14,621	..	1,400	2,208	1,400	16,829
Cochin . . .	47	..	3,559	7,096	3,559	7,143
Total . . .	36,762	19,552	294,009	525,188	313,561	581,502

As discussed before, published figures of production are available only for plantation above 5 acres. For purposes of estimating the production the figures for the area as given in the published statistics have been split up into acreages under plantations (1) below 5 acres, (2) between 5 and 10 acres, (3) above 10 acres. The production for the plantations below 5 acres has been estimated on the yield of plantations between 5 and 10 acres as given in the published statistics, as these statistics were found fairly to approximate to the actual position. The production of plantations between 5 and 10 acres as given in the Indian Coffee Statistics has not been changed in the corrected estimates. The production of plantations above 10 acres has been estimated on the data supplied by plantations covering about 30,000 acres in the different coffee growing areas. The estimated yield for 1936-37 for plantations above 10 acres is based on the average yield for the previous ten years.

The area under coffee in Travancore in 1933-34 according to Agricultural Statistics was 906, while in 1934-35 it was 5,043 acres. Marketing enquiries went to show that the figures of acreage reported in 1934-35 and subsequent years are more accurate than those reported for the previous years. Therefore, for working out the production figures, the average acreage from 1934-35 to 1936-37 has been taken as the area from 1932-33 to 1934-35. For subsequent years the acreage figures given in Agricultural Statistics have been taken.

The percentage of the difference between estimated production and published statistics is the largest in Travancore, being about ten times the published figures. This is due to the large acreage under domestic holdings which is left out of count in the official statistics of production. The yield of these small holdings is comparatively high as they consist almost

entirely of *robusta*. The estimated production in Madras, Coorg, Mysore and Cochin is also considerably higher than that of the figures given in the Indian Coffee Statistics.

The estimated annual average production of plantations below 10 acres for the period 1932-33 to 1936-37 worked out on the same basis as the total estimates are shown below :—

Estimated average production for plantations below 10 acres.
(1932-33 to 1936-37.)

	Cwt.
Madras	17,301
Coorg	3,461
Mysore	20,884
Travancore	14,621
Cochin	47
Total	56,314

About 56,300 cwt. of coffee come from the plantations below 10 acres, i.e., about 10 per cent of the total estimated production.

(d) *Trend*.—It is not possible to trace the trend of the total production of coffee in India as reliable figures are not available. The inaccuracy of the published statistics has already been discussed. Further, as in the case of acreage, the figures of production given in the Indian Coffee Statistics for the years subsequent to 1931-32 are not comparable with the figures for previous years, as the areas under plantation between 5 and 10 acres have been included only after 1931-32. But it is possible to separate the figures of production for plantation between 5 and 10 acres. Therefore, subject to the condition mentioned above, the trend of the production of plantation above 10 acres as given in the Indian Coffee Statistics may be traced from 1919-20. The following table indicates the position :—

Average production of plantations above 10 acres.*

	Cwt.
1919-20 to 1923-24	194,417
1924-25 to 1928-29	268,198
1929-30 to 1933-34	298,275
1934-35	272,497
1935-36	346,883
1936-37	284,836
1937-38	309,334

The production of plantations above 10 acres has increased by about 60 per cent, though the acreage in the same period rose by only about 30 per cent. According to these statistics either the average yield per acre has improved or the reporters are becoming more accurate and framing their estimates nearer to the actuals.

(e) "*Parchment*" (plantation) and *cherry*.—Earlier in this chapter it was mentioned that the planters supply the figures of production in terms of parchment and cherry. Appendix XIII gives the district-wise production of "*Parchment*" and "*Cherry*" coffee from 1931-32 to 1938-39. These figures represent

the produce of plantations above 5 acres as supplied by the planters in the standard form circulated by the Director General of Commercial Intelligence and Statistics from year to year. The percentage of "Parchment" and cherry from 1931-32 to 1937-38 for India is as under :—

Percentage of "Parchment" and "Cherry" coffee to total production.

(Plantations above 5 acres.)

	Parchment	Cherry.
	(plantation).	
1931-32	59	41
1932-33	57	43
1933-34	56	44
1934-35	52	48
1935-36	55	45
1936-37	57	43
1937-38	60	40
Average 1931-32 to 1937-38	57	43

The plantations below 5 acres may be presumed to be invariably preparing the crop as cherry, the production of such plantations being about 37,000 cwt. in the lustrum ending 1936-37. Therefore, the percentage for the same period of "Plantations" to cherry may be taken as 52 and 48 respectively. While it is not desirable to turn out the crop to the last bean in parchment form, it is clearly detrimental to the producer to prepare his entire coffee as cherry. Some areas seem to be better in this respect than others. The 1937-38 figures of production are analysed as under :—

Percentage of "Parchment" (plantation) and cherry to the total production.

(Plantations above 5 acres.)

(1937-38.)

	Parchment	Cherry.
	(plantation).	
Nilgiri	89	11
Salem	92	8
Malabar	51	49
Cohmbatore	86	14
Madura	49	51
Total Madras	84	16
Coorg	72	28
Hassan	42	58
Kadur	39	61
Total Mysore	41	59
Travancore	94	6
Cochin	88	12
Total India	60	40

It is seen from the above that the percentage of cherry is proportionately high in the areas where there is a large acreage under small holdings. Malabar and Madura have considerable area in small holdings, and the percentage of cherry in these areas is 51 and 49 respectively. The preparation of coffee as "Parchment" or cherry also depends on the water facilities on the estates. The high proportion of cherry in Mysore is due to the fact that in a large number of estates there is not enough water available for preparation by "wet" method.

The position is unsatisfactory in Mysore where about 60 per cent is cherry. It is understood that a large number of Indian planters prepare coffee as cherry. Madras would naturally get more money out of its coffee than Mysore, as "Parchment" fetches about Rs. 10 per cwt. more than cherry. Coorg has a fairly high percentage of "Parchment". The percentage of "Parchment" seems to be comparatively high in Travancore, but it must be remembered that the production of small holdings (which is about 90 per cent of the total production) is not included in these figures. The entire coffee from the domestic holdings is prepared as cherry. Better facilities for assembling and pulping within economic distance and better water facilities should help the producer to increase the proportion of "Parchment" and put more money into his pocket.

(f) *Quantity cured* and proportion of different grades.*—Investigations were made in the curing centres as to the approximate quantity cured every season. It was found that in 1935-36 about 279,000 cwt. were cured out of an estimated production of about 702,000 cwt. According to official statistics the production amounted to about 367,600 cwt. While, on the basis of estimated production, only about 40 per cent of the crop was cured; on the basis of published figures of production about 76 per cent was cured. It is in the interest of the growers to have all their coffee cured and graded properly. About 60 per cent of the estimated actual production does not pass through the curer. The approximate proportion of different kinds of coffee cured is as under :—

Proportions of different kinds of coffee cured.

	<i>Arabica.</i>		<i>Robusta.</i>	
	"Parchment" (plantation).	Cherry.	"Parchment" (plantation).	Cherry.
	Cwt.	Cwt.	Cwt.	Cwt.
1935-36	222,000	47,000	1,000	9,000
1936-37	125,000	23,000	500	7,000
1937-38	116,000	35,000	2,000	10,000
1938-39	200,000	55,000	1,500	18,000
Average	166,000	40,000	1,250	11,000

About 77 per cent of the quantity cured is "Plantation" coffee. While only about 55 per cent of the estimated production of "Parchment" coffee is cured and graded, only about 18 per cent of the estimated cherry crop passes through the curer. Detailed enquiries were made into the approximate quantities falling under different sizes. It was observed that, on an average, about 52 per cent fell into the 1st size, i.e., "O" or "A", about 26 per cent into the 2nd size, i.e., "B", 5 per cent into "C", 9 per cent into "Peaberry" and 8 per cent into "Triage".†

* Cured coffee is coffee dried, peeled and sized in the case of "Parchment" coffee, and coffee dried, hulled and sized in the case of "Cherry" coffee.

† These terms are explained on pages 48 and 49.

The proportion of the 1st size ranges from 15 to 62 per cent, the 2nd size "B" from 10 to 25 per cent, the 3rd "C" from 1 to 12 per cent, "Peaberry" from 4 to 19 per cent and "Triage" from 3 to 10 per cent in the same season in different estates. This subject is discussed more fully in the chapter dealing with Classification, grading and standardisation.

(g) *Quantity retained by growers.*—In the absence of any records it is difficult to estimate precisely the quantity retained by growers in different districts and provinces. Detailed investigations were conducted to find out the approximate quantity retained by the grower. In a considerable number of estates, coffee required for the personal consumption of the grower and his family or the staff who stay on the estate is taken from the last pickings of parchment and the gleanings. The amount thus kept back varies with the size of the planter's family and according to whether his circle of friends who are on the "free list" is large or small. The quantity retained in the big holdings varies from about 28 lb. to 1,200 lb. per plantation. Investigations went to show that the average quantity retained for consumption and seed purposes may be estimated at about 2 cwt. per holding in the case of bigger plantations and about 1/4 cwt. per holding in the case of plantations below 10 acres. A bushel of seed gives about 45,000 plants. In an estate of about 200 acres a bushel is normally kept for seed purposes. The best picking is retained for seed. The total quantity kept by growers is, therefore, about 10,000 cwt.

(3) SEASONAL VARIATIONS IN SUPPLIES.

Coffee picking is restricted to one season of the year, though the actual period varies slightly in different centres. The duration of picking depends on the size of the crop, the labour available and on whether the grower is turning out his coffee as parchment or cherry. Coffee is made into parchment only when it is fully ripe. In some estates picking is completed in about 3 weeks, while in other estates 2 to 3 months are taken. In the case of high-grown coffee, as in the Nilgiris, the berries ripen late and picking goes on up to May. The harvesting period is normally from October to March. "Parchment" coffee is pulped on the estate, dried and then sent down to the curers. Cherry is hulled at times in the estates, at other times it is dried and sent down to curers for hulling. Parchment starts coming into the market earlier than cherry. Normally the marketing of parchment begins from December, while cherry is not ready till January. The peak months are January and February. The average monthly arrivals from plantations in the chief curing centres are shown in Appendix XIV.

Madras.—In Madras the season varies slightly from district to district. On the Shevaroy's picking starts in September and continues till April. Nearly half the crop reaches Coimbatore in January and February for curing and marketing. In the Nilgiris picking starts in October and goes on in some regions till June. Most of the crop is cured in Coimbatore and a small portion in Mettupalaiyam and Calicut. December, January and February are the chief months, during which period more than 50 per cent of the produce moves down. In the Anaimalais, picking starts in October and continues till March. Almost the whole crop goes to Coimbatore for curing. December, January and February are the heaviest months. More than 60 per cent of the crop is shipped during this period. The whole of the Wynaad crop goes to Calicut. Picking begins in November and the crop starts moving to Calicut about the

same time. Most of the crop gets to Calicut by March. The entire crop from Billigirirangan comes to Coimbatore for curing. In Palni the 'fly-picking' (first picking) starts as early as August and continues up to February. Most of the crop goes to Virudhunagar.

Coorg.—Picking starts towards the end of November and continues till February or even later. More than 75 per cent of the crop goes down in December and January to Tellicherry and Mysore.

Mysore.—In Mysore picking starts towards the end of November and continues till April. In 1931 a special enquiry was conducted by the Department of Industries and Commerce into the road-borne trade of Mysore State and the figures published by them show the monthly variations in the movement of coffee from Mysore to Mangalore market. The lorry check books maintained by the Police Department on the frontier toll gate at Kottlidgehar, through which 90 per cent of the coffee goes out of the State, were examined and showed the following :—

Month.	No. of lorries passing to Mangalore. (1934-35.)
September	19
October	33
November	20
December	177
January	526
February	690
March	391
April	215
May	63
June	16
July	<i>Nil</i>
August	<i>Nil</i>

The average capacity of a lorry is about $2\frac{1}{2}$ tons but the lorries are invariably overloaded. January and February are the heaviest months.

Cochin.—December to March is the period of harvesting. The produce of the bigger plantations is sent down to Coimbatore and Calicut. The height of the season is in January and February.

Travancore.—Picking starts in November and continues till March. The parchment crop goes to Coimbatore for curing and marketing. Cherry is dried and marketed in the State itself. The movement of the crop from plantations to market is heavy in January and February.

(4) HARVESTING PERIOD.

Appendix XII gives the harvesting period of the major crop in the chief coffee producing countries of the world. Countries like Colombia, Ecuador and Salvador have more than one crop. The harvesting season in Brazil is from middle of March to end of September. It coincides with the off-season period in India. In Colombia the season varies with each district. In some it is from October to January and in others from March to June. Costa Rica has almost the same season as India, i.e., October to February. In Kenya the season starts from middle of August and continues till January. Hence the Kenya crops start coming into the market earlier than the Indian. In the Netherlands East Indies the main harvesting season is from April to November.

B. —Imports.**(1) IMPORTS OF COFFEE.**

Under the provisions of the Destructive Insects and Pests Act, the Government of India prohibited the importation of coffee plants, seeds and beans into India and Burma on 1st April 1931. The order still stands. For the purposes of this Act, imports from Burma continue to be treated as coastal imports.

The imports of coffee into India gradually mounted after the 1914 War as will be seen from Appendix XVI. Imports before the War amounted to only about 3,600 cwt. a year. It averaged about 35,000 cwt. in the quinquennium 1919-20 to 1923-24. The highest imports were in the 5 year period ending 1930-31, amounting to about 44,000 cwt. annually. The cheaper foreign coffees were making headway. While the price of Indian coffees ranged from Rs. 70 to Rs. 85 per cwt., the price of the imported coffees was only about Rs. 48 per cwt. More than half the imports of beans came from Ceylon and the Straits Settlements. Java came next. Imports from Aden never exceeded 700 cwt. a year. Bombay absorbed more than 90 per cent of the imports till 1920-21 when Madras started getting into the picture. In the quinquennium 1926-27 to 1930-31, Madras accounted for about 68 per cent and Bombay 28 per cent of the imports. Bengal's share was only about 2 per cent.

Imports of raw beans from Burma are showing a definite tendency to rise. Till 1930-31 there was no import from Burma. In 1930-31 it started modestly with 168 cwt. In 1934-35 it rose to 1,012 cwt. and in 1936-37 it was 5,734 cwt. In 1937-38, however, it dropped to 1,093 cwt.

Excluding the import of raw beans from Burma imports since April 1931 are confined to ground coffee and coffee extracts. About 250 cwt. were imported in 1933-34. The imports increased to about 500 cwt. in 1935-36. 75 per cent of the imports came from the United States of America. The imports of tinned coffee doubled in the course of the last three years (due to the drop in prices in the United States of America). Bengal accounts for about 50 per cent of the imports, Bombay about 34 per cent and Karachi about 15 per cent. The imports into Madras are negligible.

Average annual declared value of imports of raw coffee amounted to Rs. 23,09,290 in the 5 year period ending 1930-31. The estimated value of tinned coffee and coffee extracts imported into India in 1935-36 was about Rs. 56,000.

(2) IMPORTS OF CHICORY.

About 10,000 cwt. of chicory valued at about Rs. 1,30,000 are imported into India every year. The following table gives the share of different provinces and shows that Madras takes the largest share :—

<i>Imports of chicory (in cwt.).</i>		1935.	1936.
Madras	.	7,966	6,088
Bombay	.	2,542	3,542
Calcutta	.	80	75
Karachi	.	2	Nil
Total		10,590	10,005

About 60 per cent of the imports are from Holland and about 30 per cent from Belgium. The remainder is shared between the United Kingdom and Germany.

C.—Exports.

(1) EXPORTS BY SEA.

India exports about 32 per cent of her coffee, valued at about one crore of rupees annually.

(a) *Chief exporting ports.*—The export trade in coffee is virtually monopolised by the ports in the Madras Presidency. Appendix XVI shows the share of different provinces. During the 1914 War Bombay's share of exports was higher as shipping conveniences through the usual channels were at a minimum. But in the last quinquennium Bombay's share of the exports was only about 1 per cent. Mangalore not only occupies a unique place in the coffee market from the point of view of internal distribution but is also the chief exporting port. It is estimated that about 77 per cent of the exports from India are shipped through Mangalore. The following table shows the proportion of exports from the chief ports in the south. Appendix XV gives the details of exports by destinations :—

Proportion of exports.

(Per cent)

Ports.	1931-32.	1932-33.	1933-34.	1934-35.	1935-36.
Mangalore.	77.3	75.3	75.0	79.1	78.4
Calicut	9.9	11.9	13.5	13.1	13.6
Tellicherry	11.5	10.9	8.4	6.7	5.6
Cochin	0.8	0.2	1.1	0.5	2.1
Madras	0.3	1.5	0.9	0.4	0.2
Other ports	0.2	0.2	0.2	0.2	0.1

The exports to foreign countries from Travancore are negligible. In 1934-35, 2 cwt. of *robusta* were exported to Australia, and in 1935-36, 1 cwt. to New Zealand. The United Kingdom, European countries, Australia, New Zealand and Persian Gulf are the chief areas served by Mangalore. About 84 per cent of the shipments from Calicut go to the United Kingdom. Most of the high grown Nilgiris, the Nelliampathis, Anaimalais and Shevaroy's coffees are exported through Calicut. More than 50 per cent of the exports from Tellicherry go to France. A steady decline in the export trade of Tellicherry is noticeable. Mangalore is said to be drawing within its orbit the trade of Tellicherry. Cochin is forcing its way to the front and as its harbour develops, it may probably affect the Calicut trade. More than 90 per cent of the Cochin exports were to the United Kingdom. From the Accounts of Trade of Portuguese Possessions in India for the years 1926 to 1934 it appears that there are no exports to foreign countries. More than 90 per cent of the shipments from Bombay go to the United Kingdom. A small quantity occasionally finds its way to Bahrein Islands.

(b) *Quantities.*—Exports of coffee from India are almost confined to raw beans. Exports of manufactured coffee are negligible ; they amounted only to about 80 cwt. in 1935-36. The following table indicates the quinquennial average exports from 1905-06 and also the minimum and maximum exports during this period. The annual figures are given in Appendix XVI.

Exports (in cwt.) of coffee by sea.

	Average.	Minimum.	Maximum.
1905-06 to 1909-10	276,446	230,378	362,990
1910-11 to 1914-15	270,065	245,190	294,278
1915-16 to 1919-20	217,876	181,465	278,811
1920-21 to 1924-25	225,854	175,015	248,635
1925-26 to 1929-30	214,176	154,786	313,652
1930-31 to 1934-35	193,444	144,380	296,833
1935-36	218,919	..	..
1936-37	213,638	..	..
1937-38	135,142	..	..
1938-39	184,800	..	..

Exports declined by about 30 per cent after 1905-06 and touched the bottom in the 5 year period ending 1934-35. However, they took a turn for the better in 1935-36 and 1936-37. But in 1937-38 they reached the lowest depth. India's leading position for quality coffees was almost unchallenged before the 1914 War but competition has been keen since then from Costa Rica, British East Africa and Colombia.

(c) *Destinations.*—The United Kingdom and France have been India's best customers. More than 50 per cent of the exports are absorbed between them. The following indicates the quinquennial average exports from 1905-06 to the Empire and foreign countries :—

Average exports (in cwt.) to Empire and foreign countries.

	Total British Empire.	Total foreign countries.	Percentage of foreign exports to total.
	Cwt.	Cwt.	
1905-06 to 1909-10	154,651	121,795	44·1
1910-11 to 1914-15	119,106	150,960	55·9
1915-16 to 1919-20	111,902	105,974	48·6
1920-21 to 1924-25	116,267	109,587	48·5
1925-26 to 1929-30	97,330	116,846	54·6
1930-31 to 1934-35	65,579	127,868	86·1
1935-36	83,085	135,834	62·0
1936-37	49,449	164,189	76·9
1937-38	41,404	93,738	70·0

From about 56 per cent of the total exports, the Empire share fell to about 34 per cent in the quinquennium ending 1934-35 and in 1936-37 it reached the lowest figure of 23 per cent. The share of exports to foreign countries increased from 44 per cent to about 66 per cent in the lustrum ending 1934-35. The quinquennial averages of exports to the more important countries are shown below :—

Share (per cent) of exports to more important countries.

—	1905-10.	1910-15.	1915-20.	1920-25.	1925-30.	1930-35.	1935-36.	1936-37.
United Kingdom	44.9	31.3	27.8	34.6	28.7	27.0	33.3	16.4
Australia	3.0	3.8	4.5	3.9	3.0	2.6	2.7	2.8
Burma	1.1	1.5	2.8	2.8	5.4	1.9	1.4	1.4
Bahrein Islands	0.5	1.8	6.5	5.2	5.3	1.5	0.1	<i>Nil.</i>
France	37.0	40.6	20.2	27.8	21.6	32.9	37.8	40.6
Germany	1.0	2.9	<i>Nil.</i>	3.2	9.5	7.7	4.6	3.4
Norway	<i>Nil.</i>	<i>Nil.</i>	<i>Nil.</i>	2.8	5.5	8.1	7.6	15.9
Belgium	2.4	2.8	<i>Nil.</i>	2.8	3.1	4.6	5.8	9.4
Italy	0.2	0.3	0.1	1.5	2.7	3.6	3.0	1.4
Denmark	<i>Nil.</i>	<i>Nil.</i>	<i>Nil.</i>	0.2	0.7	0.4	0.2	<i>Nil.</i>
Netherlands	0.2	1.0	<i>Nil.</i>	3.7	7.1	4.8	0.7	2.7
Iraq	<i>Nil.</i>	<i>Nil.</i>	<i>Nil.</i>	<i>Nil.</i>	2.9	2.7	0.7	3.5
Sweden	<i>Nil.</i>	<i>Nil.</i>	<i>Nil.</i>	0.1	0.07	0.1	0.1	<i>Nil.</i>
United States of America	0.01	<i>Nil.</i>	0.01	0.1	0.20	0.07	<i>Nil.</i>	<i>Nil.</i>
Others	9.69	14.0	38.09	11.3	4.23	2.03	2.0	2.5

The increasing competition from other "mild" types of coffees especially Costa Rica seems to have adversely affected India's position in the United Kingdom market. It is observed that Costa Rica's share increased from 37 per cent in the lustrum ending 1933 to 40 per cent in the next 5 years period. Direct trade with the Continent has increased to a certain extent, though it does not compensate for the loss sustained in the United Kingdom market.

(d) *Quantities of different types.*—There are no official records to show the quantities of different types of coffee exported from India.

The raw beans of the different species of *arabica* and *robusta* are divided into (1) "Plantation" (parchment) and (2) Cherry. "Plantation" (parchment) is coffee prepared by the "wet" method. This method of preparation is described in the chapter on Preparation for market. "Plantation" coffees are divided into the following grades : (1) "Peaberry", (2) "O" or "A", (3) "B", (4) "C", (5) "Triage" and (6) "Blacks and Bits". "Peaberry" is an elliptical, oval shaped bean. "O" or "A" is the first size in flats and is a bold, heavy, well formed, bean. "B" is slightly smaller in size than "O" or "A" and "C" is smaller than "B". "Triage" consists of pale, foxy, discoloured, black spotted beans including bits. "Blacks and Bits" are the completely black beans and small bits. (2) "Cherry" coffee is coffee prepared by the "dry" method, which is described fully in the chapter on Preparation for market. Two types of "Cherry" coffee are recognised in the main coffee markets :

(a) Estate pounded, which is produced by hand hulling by growers of the dry cherry.

(b) Coast cured which is produced by mechanical hulling of dry cherry by coffee curers.

The Mangalore coffee market recognises the following standard descriptions of "Cherry" coffee :—

1. Whole crop estate pounded 5 per cent "Triage".
2. Whole crop coast cured clean garbled.
3. Native coffee "Basanally". This is whole crop estate pounded or coast cured from which bold "A", "Pb." and "Triage" have been removed.
4. Bold "A". These are the larger size flats from estate pounded or coast cured cherry. The size is not closely defined.
5. Native coffee "Pb".
6. Native coffee browns. This is "Triage" including "Blacks"

The standard descriptions of the export trade are :—

1. Native coffee "Basanally".
2. Native coffee bold "A". (Green coffee shipped before monsoon).
3. Native coffee "Pb".
4. Malabar "AA". This is "monsooned" bold "A" of a pale golden yellow colour.
5. Native coffee pearls. This is "monsooned" native "Pb".

From investigations in the course of the marketing survey at the chief exporting centres, it is possible to venture a rough estimate of the types exported from the ports on the West Coast which account for about 99 per cent of the total exports. The following are the estimated exports of *arabica* coffee for the West Coast in terms of (a) "Plantation" (parchment) and (b) Cherry.

Exports of (a) "Plantation" (parchment) and (b) Cherry from West Coast ports.

	"Plantation" (parchment).	Percentage.	Cherry.	Percentage.
	(Cwt.)		(Cwt.)	
1931-32*	97,614	59.9	65,379	40.1
1932-33*	86,328	54.9	70,852	45.1
1933-34*	100,938	53.3	88,358	46.7
1934-35*	69,444	51.5	65,388	48.5
1935-36*	141,268	64.2	78,643	35.8
1936-37*	63,015	38.2	101,818	61.8
1937-38*	71,187	47.0	79,989	53.0

The proportion of "Plantation" varied from 38 to 64 per cent during the last 7 years. The exports of "Plantation" showed an increase in 1935-36 on account of the large quantities exported to the United Kingdom which usually takes in "Plantation" coffee. About 302,000 cwt. of estimated production is "Plantation" coffee of which about 92,000 cwt. were exported in the quinquennium ending 1936-37. In 1936-37 the exports of "Plantation" dropped, while in 1937-38 they rose again. There are practically no exports of *robusta*.

(e) *Proportion of different grades.*—Detailed investigations were made in the shipping centres as to the proportion of different commercial grades of coffee exported. Only the better grades of "Plantation" coffee are shipped to London. Investigations showed that nearly 90 per cent of the exports

of "Plantation" coffee to London are reported to consist of "O" or "A" grade. The cherry crop is mostly consigned to the Continent. "Bold", "A", "Basanally" (mixture of small "A", "B" and "C") and "Monsooned AA" form more than 90 per cent of the shipments.

(f) *Value of exports.*—The declared value of exports* by sea in 1936-37 amounted to Rs. 84,99,470. It averaged Rs. 94,35,404 for the previous 3 years. The value of exports for the last 6 years is as follows :—

<i>Value of exports.*</i>	
Year.	Value. Rs.
1932-33	1,12,45,453
1933-34	1,04,55,432
1934-35	74,85,189
1935-36	1,03,65,591
1936-37	84,99,470
1937-38	54,58,719
1938-39	75,10,857

In 1927-28 the value of exports reached a maximum amount of Rs. 2,31,91,649 for 313.652 cwt. which worked out at Rs. 74 per cwt. On the basis of the declared value, the average value per cwt. for 1935-36 was Rs. 47-6. The actual ruling price in India in 1935-36 was only about Rs. 32 per cwt.

(g) *Periodicity.*—Picking of coffee starts in some places as early as September and it continues till May, the main season being October to March. Exports of coffee by sea are heaviest during these months as indicated in Appendix XVII.

On account of the monsoon, the chief ports on the West Coast are closed from the end of May to the beginning of September. Most of the September shipments are usually of coffee picked in the previous season. It is only by October that the new crop is ready for shipment. The quantity exported is more in October than in November and December on account of the comparatively heavier shipments of "monsooned" coffee of the previous year's crop. It goes on increasing month by month till it reaches the peak in March. April and May are also heavy months. July and August are the poorest months. The following table indicates the percentage of shipments in a month to the total shipments for the season, i.e., year ending 30th June.

Percentage of monthly exports to the total shipments for the season.

Month	1934-35.	1935-36.	1936-37.	1937-38.	1938-39.
July	0.5	0.1	3.2	0.2	0.8
August	Nil.	0.7	1.8	0.7	1.0
September	1.4	2.6	12.6	3.7	0.8
October	8.9	5.4	6.9	8.8	6.5
November	1.7	3.2	7.4	6.1	1.6
December	2.3	1.4	10.6	3.9	2.8
January	4.5	4.8	9.8	7.7	13.2
February	12.2	15.2	14.6	14.5	13.4
March	22.8	31.2	12.7	24.1	27.8
April	10.8	16.5	8.0	17.3	10.7
May	20.9	15.5	8.7	6.3	15.7
June	14.0	3.4	3.7	6.7	5.7

* Includes exports to and excludes exports from Burma.

February, March, April and May are usually the heaviest shipment months. In September 1936 a good quantity of "monsooned" coffee was shipped to Norway and this accounts for 12.6 per cent of the exports being shipped in September. Two-thirds of the shipments in 1935-36 were made in February, March April and May. Normally, March is the peak month.

Shipments to the United Kingdom are usually concentrated in the months of January, February, March, April and May, while those to France start from September and go on to June. Shipments to Norway are better spread over all the months than shipments to other countries.

(2) EXPORTS BY LAND FRONTIERS.

Exports of coffee by land frontiers are negligible. Enquiries made at the frontier railway stations, customs posts and from coffee traders showed that only about 800 lb. of coffee is recorded as exported in the course of a year, the value of which would be about Rs. 1,000.

Most of these coffee exports are tinned coffee. The British delegation at Kabul and the military posts at Drosh, in Chitral, and Gilgit get their coffee supplies which amount to about 500 lb. annually from Peshawar. Another quantity of 300 lb. is exported yearly from Manzaï for the consumption of the military outposts at Wana, etc.

D.—Re-exports.

With the prohibition of imports of raw beans into India in 1931, re-exports also automatically stopped. Not more than 100 lb. of ground coffee in tins (foreign) are re-exported in a year through land frontiers. Quinquennial averages of re-exports shown below indicate the position. Appendix XVI shows re-exports from 1905-06.

Period.	Re-exports.
	Cwt.
Pre-War average—(1909-10 to 1913-14)	1,172
1914-15 to 1918-19	5,485
1919-20 to 1923-24	21,161
1924-25 to 1928-29	5,230
1929-30	9,109
1930-31	4,836
1931-32	2,752

Re-exports increased considerably after the 1914 War but declined in the ustrum ending 1928-29.

Destinations.—Before 1931, Arabia and Muskat Territory, Iraq and Persia took more than 90 per cent of the re-exports. Bahrein Islands also took good quantities.

E.—Total and net available supplies.

Appendix XVIII gives the estimated net available supplies and consumption of coffee in India from 1932-33. The export by land frontiers being negligible has not been included in these figures. The following table indicates the total and net available supplies for 1935-36 and 1936-37 :—

Total supplies.	1935-36.	1936-37
	Cwt.	Cwt.
Estimated production	701,850	579,401
Imports by sea*	647	7,246
Total available supplies	702,497	586,647
<i>Deduct</i>		
Exports by sea	257,157	139,020
Quantity retained by growers	10,000	10,000
Total	267,157	149,020
Net available market supply	435,340	437,627

NOTE.—The production year is from July to June. The crop starts coming into the market from November and the exports usually begin from December. For working out the net available market supply the exports and imports are, therefore, calculated for years ending November.

The *per capita* consumption in India (excluding Burma) for 1935-36 was 0·137 lb. and for 1936-37, 0·136 lb. which in terms of liquid coffee is about 7 cups† (6 oz. cups). The comparative demand for coffee in different countries of the world and different parts of India are discussed later in the chapter on Demand.

F.—Burma.**(1) SUPPLIES.**

Burma appears to have had her first coffee plantation in about 1885. The Forest Department opened two experimental gardens, one at Mergwi and the other at Tavoy. Due to severe leaf disease, these had to be closed down. About the same time a coffee plantation at Nanchu in the Karen Hill tract was opened. Coffee blight seems to have practically wiped out the plantation in 1897 and 1898. The seeds taken from isolated trees which escaped blight were used for further propagation. The Karens took to coffee cultivation. The Karen coffee otherwise known as Tongoo coffee is considered to be the best coffee produced in Burma. It is probable that from the Karen Hills the cultivation spread to the Myelat area of the southern Shan State and from there to the northern Burma Hills. A few plants may be seen in some parts of the Federated Shan States other than Chaungwe and Myelat area in the Mogok sub-division of the Katha district and from Wuntho northwards on the Myitkyina Railway Line.

* From Burma.

† 50 cups per lb. of coffee.

The chief acreages are now concentrated in :—

- (a) Yengan, Pinlaung, Pwela and Pindaya in the southern Shan States for which the main collecting centre is Aungban ;
- (b) Karen Hills near Thandaung for which the collecting centre is Tongoo ;
- (c) Chaungwe in the Hsipaw State for which the collecting centre is Chaungwe itself ; and
- (d) Sinlunkaba Hill tracts for which the collecting centre is Bhamo

As most of the coffee grown in Burma is in areas outside the scope of the Burma Land Records Department, the acreage figures given in the Agricultural Statistics of India and the Burma Season and Crop Report are misleading. According to these publications the average acreage for the lustrum ending 1934-35 was only about 15 acres while investigations have shown that there the area during this period was about 2,000 acres. The revenue assessment returns from some of the producing areas are also of little use as the estimated production based on these returns is found to be far short of the quantity carried by the railways and lorries.

The estimated average production of coffee in Burma for the quinquennium ending 1935-36 is about 5,000 cwt. The following table indicates the position of production :—

Estimated production of coffee in Burma.
(Cwt.)

Year.	Southern Shan States.	Karen Hills.	Chaungwe area.	Bhamo.	Others.	Total.
1931-32 . .	3,060	900	<i>Nil.</i>	100	5	4,065
1932-33 . .	3,390	1,000	<i>Nil.</i>	150	4	4,544
1933-34 . .	3,790	900	<i>Nil.</i>	130	5	4,825
1934-35 . .	4,190	1,000	100	150	5	5,445
1935-36 . .	5,000	1,200	200	200	6	6,606
Average .	3,886	1,000	60	146	5	5,097
1928-29 . .	1,370	500	<i>Nil.</i>	90	3	1,963

The total estimated production in the succeeding years are as under---

	(Cwt.)
1936-37	7,000
1937-38	6,500
1938-39	6,500

About 76 per cent of the production is in southern Shan States. Almost the whole acreage consists of plants in small domestic holdings. The only area of some size is the one at Chaungwe opened in 1934 which has about 120 acres in one block. The size of the majority of the holdings is only about 1/10th of an acre and coffee is mostly grown along the fences of house compounds. Production of coffee seems to be steadily increasing in Burma. In the course of 10 years production has more than tripled.

(2) IMPORTS AND TREND.

Appendix XIX shows (coastwise and foreign) imports into Burma from 1905-06. The following table indicates the quinquennial average imports into Burma from 1905-06 :—

Quinquennial average imports of raw beans into Burma from 1905-06.

Year.	Imports from India. (Cwt.)	Total imports. (Cwt.)
1905-06 to 1909-10	3,012	6,108
1910-11 to 1914-15	3,950	6,287
1915-16 to 1919-20	5,894	6,964
1920-21 to 1924-25	6,240	9,570
1925-26 to 1929-30	13,567	14,913
1930-31 to 1934-35	3,731	4,373
1935-36	3,097	3,097
1936-37	3,009	3,009
1937-38	3,973	3,973
1938-39	2,716	2,716

The sharp decline in imports in the quinquennium ending 1934-35 was due to the prohibition of imports of raw beans from foreign countries which came into force in April 1931. Besides India, the Straits Settlements and Java were the chief sources of imports. From 1930-31 a general downward movement of imports of raw beans is noticeable on account of the increasing production in Burma. The lowest figure of 2,716 cwt. was touched in 1936-37. A relative increase in production and imports of ground coffee appears to have compensated for the fall in imports of raw beans as the following table illustrates :—

Production and imports of coffee in Burma.

Year.	Production in Burma.	Imports of raw beans.	Imports of roasted and ground.
	Cwt.	Cwt.	Cwt.
1928-29	1,963	6,931	..
1929-30	2,644	8,905	..
1930-31	3,274	6,715	(Not available).
1931-32	4,065	4,213	..
1932-33	4,544	4,075	1,720
1933-34	4,825	3,437	1,840
1934-35	5,445	3,428	2,450
1935-36	6,006	3,097	2,630
1936-37	7,000	3,009	3,316
1937-38	6,500	3,973	1,634
1938-39	6,500	2,716	1,808

Figures of imports of ground coffee are only available from 1932-33 but they sufficiently indicate the trend.

(a) *Value of imports.*—The approximate value of imports was Rs. 4,15,056 in 1935-36 and the annual average value of imports from 1932-33 to 1935-36 was Rs. 4,26,519.

(b) *Imports of chicory.*—Burma imports about 150 cwt. of chicory valued at Rs. 2,500 a year. In 1936-37 the imports were 128 cwt.

(3) EXPORTS.

The average annual exports of coffee from Burma for the lustrum ending 1936-37 were only 1,526 cwt. In 1937-38 it was 1,093 and in 1938-39 895 cwt. Most of it finds its way to the Madras Presidency. Appendix XIX gives the exports from 1905-06. For the first time in 1936-37, Burma exported more raw beans to India than she imported from India. The relatively cheap price of Burmese coffee is responsible for turning the scales. In 1935-36 a trial shipment appears to have been sent to the United Kingdom, where it is understood that it did not find favour as the quality was considered to be poor.

Re-exports are next to nothing. Except in 1931-32 when 74 cwt. of coffee were re-exported to the Straits Settlements there has been no re-export of coffee.

(4) ESTIMATED QUANTITY RETAINED BY GROWERS.

As coffee is not generally consumed by the growers in Burma little or no coffee is retained by them. For seed purposes and consumption by growers nothing more than 20 cwt. are kept.

(5) NET AVAILABLE SUPPLIES.

The net available supplies of coffee in Burma for 1934-35 and 1935-36 were as under :—

	1934-35.	1935-36.
	Cwt.	Cwt.
Production	5,445	6,606
Imports	5,878	5,727
	11,323	12,333
Exports	1,042	617
Quantity retained by growers	20	20
	1,062	637
Net available market supply	10,261	11,696

NOTE.—Imports and exports figures are for the year ending November while those for production are for the year ending June.

The *per capita* consumption in 1934-35 was 0·075 lb. or nearly 4 cups and in 1935-36, 0·085 lb. or a little over 4 cups.

INTER-CHAPTER ONE.

Coffee is an important commodity in India's commerce. The value of the annual production of coffee is estimated at about $1\frac{1}{2}$ crore of rupees and the plantations provide employment for nearly a lakh of persons.

The acreage under coffee in India (approximately 200,000 acres) has remained fairly steady in recent years. The abrupt rises and falls in acreage shown in published estimates are obviously due to the unsatisfactory methods of collecting the statistics. Of the total acreage, Mysore has 50·2 per cent, Madras Presidency 26·5 per cent, Coorg 19·5 per cent, and Travancore and Cochin 3·7 per cent. Extensive areas on coffee plantations, however, still remain uncultivated due to the want of an adequate market for the produce.

The area actually plucked is estimated at 88 per cent of the planted area in the lustrum ending 1936-37. The area not plucked consists of non-bearing trees under 5 years, plants infected with pest and diseases and vacancies caused by accidental falling of shade trees due to old age, etc.

The personal attention bestowed on small plantations neutralises, to a certain extent, the effects of primitive methods of cultivation. As, however, there are about 37,000 acres of coffee in plantations below 10 acres, the problem of focussing the grower's attention on good cultivation deserves to be considered. The entire crop from small holdings is mostly cherry-dried, which sells at a cheaper rate than parchment, so that the small holders who depend on this particular crop for a living naturally fare worse than the bigger producers. The market charges incurred by the small planters are also proportionately high as the quantity involved is small. It would, therefore, be in the interests of the small producers to pool their resources and to put on the market a fairly uniform and standard quality product. This is of primary importance in Madras, Travancore, and Cochin where small holders are numerous. In certain districts of Mysore also, much of the coffee is produced on small holdings. This type of marketing problems should be examined and dealt with on a district-wise basis as each district has its own distinctive characteristics.

In the course of the last 30 years, the acreage of small holdings (area below 10 acres) has dwindled by more than half, while the area under larger plantations has increased by about a quarter. It seems that the financial strain caused

by the fall in prices has been responsible for wiping out many of the weaker producers.

According to marketing investigation, the average yield (in lb.) per acre of *arabica* and *robusta* for the years 1932 to 1936 was 217 and 453 respectively. Ways and means of improving the yield without sacrificing quality, particularly of *arabica*, should engage the attention of the industry, as this would reduce the cost of production per cwt. and at the same time give better returns to the planters.

Robusta coffee is becoming increasingly popular with small planters on account of its resistance to disease and pests and its prolific yield. At present, however, only 10 per cent of the total area is under *robusta*. During a recent survey in Coorg, however, it was observed that the area under *robusta* was rapidly increasing and was estimated at 30 per cent of the total.

10 per cent of the coffee acreage is under trees below 5 years, 20 per cent under trees of age-group 30 to 60 years and 22 per cent under trees of over 60 years of age. The greater portion of the crop is, however, collected from the remaining 48 per cent. The average yield (in lb.) per acre according to age groups was found to be as under :—

Below 3 years		Nil
3 to 5 years		Negligible
5 to 10 years		280
10 to 30 years		443
30 to 60 years		392
Above 60 years		150

From this it would appear that the older trees are distinctly unprofitable. It may be observed that in Brazil trees of 30-35 years are not included in the valuation of plantations.

The percentage of plantation and cherry in the lustrum ending 1936-37 may be taken as 52 and 48 respectively. The production of cherry is proportionately high in the areas where there is a large acreage under small holdings. The preparation of coffee as parchment or cherry depends considerably on the water facilities on the estates. For example, in Mysore, where a large number of estates do not have enough water available for preparation of coffee by the "wet" method, the production of cherry is 60 per cent. While it is not desirable to turn out the crop to the last bean in parchment form, it is clearly detrimental to the producer to prepare his

entire coffee as cherry. Better facilities for assembling and pulping within economic distance and better water facilities would help the producer to increase the proportion of parchment and put more money into his pocket.

It was found that in 1935-36 about 279,000 cwt. were cured out of an estimated production of about 702,000 cwt. About 77 per cent of the quantity cured is "Plantation" coffee. On the whole, only about 55 per cent of the estimated production of "Parchment" coffee and about 18 per cent of cherry passes through the curer. Enquiries about the approximate quantity falling under different sizes showed that, on an average, about 52 per cent fell into the 1st size, i.e., "O" or "A", about 26 per cent into "B", 5 per cent into "C", 9 per cent into "Peaberry" and 8 per cent into "Triage". The proportion of the 1st size ranges from 15 to 62 per cent, the second size "B" from 10 to 25 per cent, the 3rd "C" from 1 to 12 per cent, "Peaberry" from 4 to 19 per cent and "Triage" from 3 to 10 per cent in the same season in different estates. It would be in the interests of the growers to have all their coffee cured and graded properly.

In an estate of about 200 acres, a bushel of the best crop is normally kept for seed purposes. The total quantity kept by growers for seed and consumption is about 10,000 cwt.

The harvesting period is normally from October to March. Parchment starts coming into the market earlier than cherry and its marketing begins from December. Cherry is not, however, ready till January. The peak months are January and February. The harvesting season in Brazil which is from the middle of March to the middle of September coincides with the off-season period in India.

Under the provisions of the Destructive Insects and Pests Act, the Government of India prohibited the importation of coffee plants, seeds and beans into India and Burma on 1st April 1931. The order still stands. For the purposes of this Act, imports from Burma continue to be treated as coastal imports. Excluding the import of raw beans from Burma, imports since April 1931 are confined to ground coffee and coffee extracts. About 250 cwt. were imported in 1933-34 and about 500 cwt. valued at about Rs. 56,000 in 1935-36. 75 per cent of the imports come from the United States of America. The imports of tinned coffee doubled in the course of the last three years (due to the drop in prices in the United States of America).

About 10,000 cwt. of chicory valued at about Rs. 1,30,000 are imported into India every year. About 60 per cent of the imports are from Holland, 30 per cent from Belgium and the remainder from the United Kingdom and Germany.

India exports annually about 32 per cent of her coffee valued at about one crore of rupees. Exports declined by about 30 per cent after 1905-06 and touched the bottom in the 5 year period ending 1934-35. They improved, however, in 1935-36 and 1936-37 but again dropped and reached the lowest depth in 1937-38.

The United Kingdom and France have been India's best customers and more than 50 per cent of the exports are absorbed between them. India's leading position for quality coffees was almost unchallenged before the 1914 War but competition has been keen since then from Costa Rica, British East Africa and Colombia. The exports to Empire countries declined by about 58 per cent within the last 30 years while those to foreign countries rose by about 5 per cent during the same period. From about 56 per cent of the total exports, the Empire share fell to about 34 per cent in the quinquennium ending 1934-35, and in 1936-37 it reached the lowest figure of 23 per cent. The share of exports to foreign countries increased from 44 per cent to about 66 per cent in the lustrum ending 1934-35. The increasing competition from other "mild" types of coffees, especially Costa Rica, seems to have adversely affected India's position in the United Kingdom market. Direct trade with the Continent has increased to a certain extent, but it does not compensate for the loss sustained in the United Kingdom market.

About 92,000 cwt. of "Plantation" coffee were exported annually in the quinquennium ending 1936-37. In 1936-37 the export of "Plantation" dropped, but in 1937-38 it rose again. The declared value of exports by sea in 1936-37 amounted to Rs. 84,99,470 and averaged Rs. 94,35,404 for the previous 3 years.

Shipments to the United Kingdom nearly 90 per cent of which consist of "O" or "A" grade of "Plantation" coffee, are usually concentrated in the months of January, February, March, April and May while those to France start from September and go on to June. Shipments to Norway are better spread over all the months than shipments to other countries.

The net available market supply in India for the years 1935-36 and 1936-7 was 435,340 and 437,627 cwt. respectively. The *per capita* consumption in India (excluding Burma) for 1935-36 may be reckoned at 0.137 lb. and for 1936-37 at 0.136 lb.

The relative increase in production and imports of ground coffee appears to have compensated for the fall in imports of raw beans. The approximate value of imports was Rs. 4,15,056 in 1935-36 and the annual average value of imports from 1932-33 to 1935-36 was Rs. 4,26,519.

Production of coffee seems to be steadily increasing in Burma. In the course of 8 years it has more than doubled and for the quinquennium ending 1935-36 it is estimated at about 5,000 cwt. Almost the whole acreage consists of plants in small domestic holdings. For the first time in 1936-37, Burma exported more raw beans to India than she imported from India. The relatively cheap price of Burmese coffee is responsible for turning the scales. The *per capita* consumption in Burma in 1934-35 was 0.075 lb. and in 1935-36, 0.085 lb.

CHAPTER II.—DEMAND.

A.—Quantitative requirements.

The absence of accurate statistics of production as mentioned in the previous chapter, makes it difficult to gauge the extent of the internal demand. The wide difference between the published statistics and the estimated figures of production leaves considerable room for doubt as to the precise facts of the situation. The difficulty of assessing the consumption is enhanced by the fact that the producing areas happen to be also the largest consuming areas of coffee in India. About 96 per cent of the coffee available for consumption in India is consumed within Madras, Coorg, Mysore, Travancore and Cochin. The rest of the country consumes only about 4 per cent of the net available supplies. The movement of coffee between one producing centre and another is mostly by road and there are no official records of road traffic. This partly complicates the position and increases the difficulty of estimating the demand in each of the producing areas. Statistics of consumption in the non-producing areas can be worked out with greater accuracy and precision from the published figures of rail, river-borne, coastal and sea-borne trade. The position, therefore, is that while there are fairly accurate statistics relating to the consumption of about 4 per cent of the net available supplies, about 96 per cent are not precisely accounted for. To get an accurate idea of demand it is necessary to rectify the position. First and foremost the statistics of production must be made more accurate. As things are, figures of coffee received in the chief curing yards are available, but it is estimated that a considerable quantity of coffee does not pass through the curer and in order to have these figures it is necessary to keep count of the road traffic between the different producing centres.

The net supply available for consumption in the whole of India worked out on estimated figures of production during the lustrum ending 1936-37 is as under :—

Estimated available supply and per capita consumption.

Year (December to November.)	Estimated net available supply.	Per capita consumption.	
		(lb.)	(Cups.)*
1932-33	305,204	0.099	5.0
1933-34	329,677	0.106	5.3
1934-35	453,398	0.144	7.2
1935-36	435,340	0.137	6.9
1936-37	437,627	0.136	6.8

It would appear from these figures that there has been a gradual increase in demand. It has risen from 5 cups per head per annum in 1932-33 to 7 cups in 1936-37. The figures for 1935-36 and the succeeding year should be taken together, as more than the usual quantity appears to have remained in stock at the close of 1935-36 for consumption in 1936-37.

If the *per capita* consumption could be increased by even so small a quantity, as 0.15 lb. per head, the entire coffee produced in India could be easily absorbed in this country. A comparison of the consumption of coffee in some of the chief coffee consuming countries of the world according to the latest figures available, as indicated below, shows the big scope for development provided by the home market.

* On the basis of 50 cups a lb.

Per capita consumption of coffee in different countries.

Country.	lb.
Brazil	20.56
Sweden	16.60
Cuba	15.99
Denmark	15.74
United States	13.27
Belgium	12.94
Norway	10.57
Finland	9.89
France	9.75
Netherlands	9.72
Switzerland	7.29
Germany	5.78
Algeria	4.56
Canada	3.38
Argentina	3.37
Union of South Africa	3.30
Uruguay	3.26
Spain	2.25
Italy	1.94
Greece	1.80
Portugal	1.75
Austria	1.72
Czechoslovakia	1.36
Chile	1.23
Egypt	0.96
United Kingdom	0.71
Hungary	0.64
Rumania	0.60
Australia	0.59
Ceylon	0.51
Paraguay	0.36
New Zealand	0.30
New Foundland	0.29
India	0.136
Japan	0.09
Russia	0.005
China	0.001

The biggest producer is the biggest consumer. Brazil tops the world countries in consumption as well as production. At the same time countries which do not produce any coffee take in appreciable quantities. India's neighbour, Ceylon, and the poorest consuming areas in Europe, like Hungary and Rumania, take about four times the quantity that is consumed per head in India. Even in United Kingdom where coffee occupies only a minor place, the consumption per head is above five times more than in India. It is a point of considerable significance to the coffee industry that, in spite of the fact that she produces some of the best quality coffees of the world, India's consumption ranks so low as compared with other countries. It is, however, a satisfactory

feature that the Indian Coffee Cess Committee, constituted by the Government of India in 1935, has made a beginning with propaganda to tap the large potential demand in India itself.

Appendix XX gives the estimated annual consumption of coffee in different provinces and States in India from 1933-34 to 1937-38. The average annual consumption for the three year period ending 1935-36, and the *per capita* consumption (in lb. and cup) are given below :—

Annual per capita consumption of coffee in provinces and States.
(Average of 1933-34 to 1935-36).

Province/State.	Net available supply.	Per capita consumption.	
		lb.	Cups.
Madras	Cwt. 269,000	0·619	31
Coorg	3,000	2·061	103
Mysore	112,400	1·850	93
Travancore	17,100	0·341	17
Cochin	6,260	0·530	27
Bombay	6,351	0·038	2
Nizam's Dominions	1,870	0·014	0·7
Sind and British Baluchistan	296	0·007	0·4
Punjab including North-West Frontier Province and Delhi	1,655	0·007	0·4
Central Provinces and Berar	408	0·003	0·2
Bengal	1,142	0·002	0·1
United Provinces	610	0·001	0·05
Bihar and Orissa	257	0·0007	0·04
Rajputana	95	0·0009	0·05
Assam	36	0·0004	0·02
Central India	96	0·003	0·2
Kashmir	90	0·003	0·2
Total	420,676	5·4810	275·36
Punjab*	630	0·003	0·2
Delhi*	240	0·035	2
North-West Frontier Province*	192	0·0008	0·04
Bihar*	238	0·0008	0·04
Orissa*	621	0·006	0·3

* The figures for these areas relate to 1937-38.

Since the actual distribution of coffee to the interior markets starts normally from about December, the consumption figures are worked out for periods ending November. The production year is taken as from July to June. The net available supplies in producing areas *viz.*, Madras, Coorg, Mysore, Travancore and Cochin are only broad estimates as more than 75 per cent of the movement of coffee between these territories is by road and, as already stated, there are no special records of road statistics. Figures of consumption of coffee in Delhi Province, North-West Frontier Province, Punjab, Bihar and Orissa are available only for 1937-38 as these have been shown separately in the Rail and River-borne Trade of India only from that year.

Out of an estimated average total of 422,000 cwt. consumed in India, only about 15,000 cwt. are consumed in the non-producing area; while more than 407,000 cwt. are consumed by about 63 million people, only about 15,000 cwt. are consumed by a remaining population of over 289 millions. The *per capita* consumption in the non-producing areas is only about 0.006 lb. and in the producing areas about 0.7 lb. Even in the largest consuming areas it is obvious that coffee has barely touched a fringe of the population. If the *per capita* consumption in these areas could be increased by another $\frac{1}{4}$ lb. per head, all the coffee produced would be consumed in India. Even then the consumption in these areas would be only 1/16th of the consumption of coffee in Sweden which imports all its requirements. It will still be less than that in the first twenty coffee consuming countries of the world.

In the non-producing areas, coffee is practically an unknown drink to the general population. Milk and butter-milk hold the field in these places. Recently, tea has made rapid strides and it may be safely asserted that coffee has an equally good future in, what may be termed, this "no man's land." Glancing at the world figures of consumption it is seen that countries which consume more milk drink more coffee. But in India it is the other way about. Areas which consume relatively less milk take more coffee. According to the latest available figures the *per capita* consumption of milk as compared with that of coffee in the chief provinces and States in India are given below:—

Per capita consumption of milk and coffee in the chief provinces and States in India.

Province/State.	Annual <i>per capita</i> consumption.	
	Milk	Coffee.
	lb.	lb.
Madras	24	0.6
Bombay	26	0.04
Bengal	32	0.002
Punjab	90	0.003
Delhi	82	0.035
North-West Frontier Province	97	0.008
Bihar	25	0.0008
Orissa	14	0.006
United Provinces of Agra and Oudh	26	0.001
Central Provinces and Berar	16	0.003
Assam	13	0.0004
Sind and British Baluchistan	154	0.007
Nizam's Dominions	22	0.014
Cochin	14	0.53
Mysore	15	1.85
Kashmir	49	0.003
Travancore	7	0.341

It will be seen from the above that coffee does not find favour in areas where milk consumption is comparatively high. North-West Frontier Province and Punjab consume more than six times the quantity of milk consumed in Mysore. The 19th report of the Imperial Economic Committee says, "It is significant that Sweden and Denmark, which have the highest consumption of coffee per head of population (16.6 and 15.74 lb. respectively) also have a milk consumption of 68 and 70 gallons per head compared with the United Kingdom figure of 22 gallons". As coffee requires a generous admixture of milk, the cheapness and abundance of milk supply are vital factors that should contribute to an increase in demand for coffee. Sind, North-West Frontier Province, Punjab and Delhi, therefore, appear to be good potential markets for coffee.

(1) TYPES OF COFFEE IN DEMAND.

Various types of raw beans have been described earlier (see pages 48 and 49). Other types of coffee are described below :—

Polished and coloured coffee.—Polishing is the removing, by mechanical process, of the silver skin on the beans and colouring is the application of different shades of colour to the polished beans for purposes of disguising the real colour of the beans. This subject is discussed later in the chapter on Preparation for market.

Roasted coffee is coffee which by the action of heat has become brown and has developed its characteristic aroma.

Ground coffee is placed on the market in various forms. They are either freshly ground or sold in packages. Freshly ground coffee is coffee generally ground in the presence of the consumer and sold in bulk, i.e., without being tinned. Ground coffee sold in packages may be divided into—

- (i) Pure,
- (ii) French and
- (iii) Other mixtures.

Ground coffee packed in tins without any admixture is termed "Pure". Coffee to which any quantity of chicory is mixed is called "French" coffee. Coffee adulterated with coffee husk, Bengal gram, Kuvadia seed, oilseeds, sawdust or any other adulterants excluding chicory comes under "other mixtures."

Tablet coffee is coffee ground and prepared in tablet form with or without the addition of chicory or other adulterants.

Coffee husk is the pulp of the coffee fruit which is often used for adulterating coffee.

"*Pales*" are immature or dead beans, sometimes almost straw coloured and lighter in weight than mature ones.

(a) *Arabica, robusta and liberica.*—Detailed investigations were made about the different kinds of coffee in demand in India. It was found that about 85 per cent of the demand is for *arabica*. On an average, about 340,000 cwt. of *arabica* as against 50,000 to 60,000 cwt. of *robusta* are consumed every year. The demand for *arabica* comes mostly from the producing areas. *Robusta* is not exported and, therefore, almost the entire crop is absorbed in India. The increase in production of *robusta* in recent years and its comparatively low price have, to a certain extent, displaced *arabica*. *Robusta* is used largely for manufacturing tablets and lower grades of tinned coffee. It sells on a price basis and the poorer classes generally go in for it. The possibility of

a more extensive production of *robusta* coffee to meet the internal demand for a cheap coffee is, therefore, a point for consideration.

(b) *Polished and unpolished*.—Detailed investigations were made into the extent of demand for polished and coloured coffee. About 60,000 cwt. are polished every season of which about 40,000 cwt. are colour-polished. More than half the *robusta* crop and a fair quantity of *arabica* cherry are polished and more than 75 per cent of *robusta* is also coloured. This subject is dealt with later in detail in the chapter on Preparation for market.

(c) *Raw, roasted and ground*.—In 1936-37, searching enquiries were made in different provinces and States in India to find out the demand in terms of raw, roasted, freshly ground and tinned coffee.

Interesting data were collected and the following table indicates the position :—

Consumption of different kinds of coffee in provinces and States.

(Average of 1933-34 to 1935-36).

(In cwt).

Province/State.	Raw.	Roasted.	Freshly ground.	Ground coffee in packages.	Total.
Madras	242,275	81	20,000	6,644	269,000
Coorg	3,000	..	..	..	3,000
Mysore	106,330	112	3,597	2,361	112,400
Travancore	16,929	..	..	171	17,100
Cochin	6,135	..	..	125	6,260
Bombay	2,979	196	991	2,185	6,351
Nizam's Dominions	1,331	..	53	486	1,870
Punjab*	105	52	158	315	630
Delhi*	49	14	52	125	240
North-West Frontier Province*	19	10	48	115	192
Punjab including North-West Frontier Province and Delhi	275	116	397	867	1,655
Bengal	185	17	176	764	1,142
Central Provinces and Berar	85	..	4	319	408
Bihar and Orissa	28	..	3	226	257
Bihar*	26	..	3	209	238
Orissa*	68	..	7	546	621
United Provinces of Agra and Oudh	82	20	20	488	610
Sind and British Baluchistan	42	11	32	211	296
Assam	5	..	5	26	36
Total	379,948	629	25,546	16,183	422,306

* The figures for these areas relate to 1937-38.

About 90 per cent of the coffee consumed in India is sold in raw form. The sale of roasted beans amounts to about 0·1 per cent and is, therefore, of little account. About 6 per cent is sold in freshly ground form. The consumption of ground coffee in tins including tablets only amounts to about 4 per cent of the total. The estimated consumption of tablets is about 6,000 cwt.

While more than 97 per cent of the raw beans and 92 per cent of freshly ground coffee is consumed in the producing areas, only about 58 per cent of tinned coffee finds its way into these markets. Taking the producing areas as a whole about 92 per cent is sold in raw form, about 6 per cent as freshly ground coffee and only 2 per cent as tinned coffee. In the non-producing areas, only about 36 per cent of the total coffee sold is in raw form. About 47 per cent is sold as tinned coffee and about 13 per cent as freshly ground coffee. The percentage sales of tinned coffee are comparatively high in the non-producing areas. Excluding Bombay and the Nizam's Dominions which are situated close to the producing areas, the proportion of consumption of raw, roasted and ground coffee in non-producing areas is as under :—

	Per cent
Raw	15·3
Roasted	3·8
Freshly ground coffee	14·3
Tinned coffee	66·6

While about two-thirds of the total consumption in the non-producing areas excluding Bombay and the Nizam's Dominions is for tinned coffee, the demand for the same in the producing areas is only 2 per cent of the total. The further north we go the higher is the proportion of consumption of tinned coffee. It is also noteworthy that the proportion of sales of freshly ground coffee is higher in the north of India than in the South. In the producing areas most of the families buy raw coffee as the technique of roasting and grinding is familiar to them. In the North, consumers have no knowledge of roasting and grinding and therefore they prefer to buy either tinned coffee or coffee freshly roasted and ground for them in the shops at the time of purchase.

Madras Presidency.—The *per capita* consumption works out only to 0·62 lb. or 31 cups per annum. Though the people of Madras are reputed to be heavy coffee drinkers, the consumption per head must be considered low as compared with the United States of America and European countries. In the urban areas of most districts in the Madras Presidency coffee is the favourite beverage. In the rural areas, coffee has still to make headway and this accounts for the comparatively low *per capita* consumption in the Presidency. Statistics of consumption were collected from a few typical towns and they are as under :—

Per capita consumption and net imports in a few towns.

	Net imports 1935-36. (Ry. mds.)	<i>Per</i> <i>capita</i> consump- tion. (lb.)
Kumbakonam	3,767	7·0
Tinnevely	5,226	5·0
Trichinopoly	5,882	4·5
Mayavaram	1,280	4·5
Tanjore	2,055	3·0
Chidambaram	840	3·0
Erode	885	3·0
Madura	3,254	2·0
Nellore	350	0·9
Bellary	203	0·5

It has not been possible to compute the demand in Mangalore or South Canara as the produce from Mysore and Coorg moves by road to Mangalore. However, it is understood that South Canara is one of the heaviest coffee-consuming parts of the presidency. In the south, south-eastern and north-western areas of the presidency, coffee appears to be more popular than in other parts. Kumbakonam leads with a consumption of 7 lb. per head followed by Tinnevely with 5.0 lb. and Trichinopoly and Mayavaram with 4.5 lb. each. The consumption is comparatively low in the Circars and Ceded districts. Nellore which is one of the important towns in the northern area of the presidency takes in only 0.9 lb. per head, while Bellary which is one of the typical towns in Ceded districts has only a consumption of 0.5 lb. per head per year. It is difficult to estimate the consumption in Malabar district on account of the heavy road traffic from producing centres like Coorg, Wynaad, Naduvattam and Nelliampathis. However, marketing enquiries showed that consumption is comparatively low in Malabar as tea is preferred by the Muslims and Nairs. But it is understood that on account of the increase of coffee hotels in the bigger towns in Malabar, the coffee habit is spreading. Coffee with jaggery is a popular drink with poorer classes in North Malabar.

The majority of consumers roast and grind their own coffee. The demand for raw beans is therefore high and more than 70 per cent is sold as raw beans. There is, however, an increasing demand for freshly ground coffee. Investigations show that about ten years ago freshly ground coffee had not the same appeal as it has to-day. With the increase of education and labour saving machinery the average middle class house in the bigger towns prefers to get its requirements of coffee from the bazar, freshly ground in the buyers' presence in the course of a few minutes. Figures taken from one prominent dealer showed that his sales increased from about 1,560 lb. a month in 1934 to 6,100 lb. in 1938—an increase by about three times in 4 years. The sale of tinned coffee and tablets is only about 2 per cent of the total. The consumption of tablets is estimated to be about 3,500 cwt. out of a consumption of 6,644 cwt. of coffee in packages.

Detailed investigations were made into the number of coffee shops acting as cafés or restaurants in the presidency and their requirements of coffee. In Madras there are about 14,000 such coffee shops and assuming that 50 to 60 cups are sold on an average in a day in each shop, the estimated consumption would be about 50,000 cwt. a year i.e., more than a quarter of the total demand for raw beans comes from coffee shops. The habit of drinking coffee in a café is apparently strong among the urban population. Almost all these cafés purchase raw beans and the roasting and grinding operations are performed on the premises.

Coorg.—Coorg with its plentiful coffee estates heads the rest of India in the matter of consumption. Coffee has no rival in Coorg as a temperance beverage. The consumption is 2.06 lb., equivalent to 103 cups per head per annum. The demand is mostly confined to raw beans. The estimated import of ground coffee is only about 5 cwt., approximately 50 per cent of which is tablet coffee.

Mysore.—The *per capita* consumption is about 1.85 lb., equivalent to 93 cups. But even this figure is low compared with the consumption of coffee in most of the continental countries, where the *per capita* consumption ranges from 5.8 in Germany to 16.6 lb. in Sweden.

About 95 per cent of the demand is for raw beans. As in the Madras presidency, the demand for freshly ground coffee is increasing with the increase in the number of mechanical appliances for roasting and grinding coffee on.

a commercial scale. There is practically no demand for roasted coffee. The demand for ground coffee in tins is not appreciable. It works out to only about 2 per cent. Figures of imports of coffee by rail into Bangalore City and Cantonment in terms of raw beans and ground coffee were as under :—

Imports (by rail) of coffee into Bangalore city and cantonment.

	Raw.	Ground coffee in tins.
	(Cwt.)	(Cwt.)
1934	7,535	605
1935	7,586	668
1936	9,956	422

The imports of ground coffee in tins are about 6 per cent of the total. Throughout the State the demand for ground coffee in tins is mostly confined to the towns.

Travancore.—About 17,000 cwt. of coffee are consumed in Travancore. The *per capita* consumption is about 0.34 lb. equivalent to 17 cups. Coffee has yet to make considerable headway in this territory. More than 98 per cent of the demand is for raw beans. Enquiries showed that the demand for coffee powder in tins is decreasing. Out of a consumption of 171 cwt. Trivandrum takes in about 50 cwt. It was about double prior to 1930. Tablets also appear to have been more popular a few years back. The production of cheap local *robusta* coffee is apparently the chief cause for the decline in the imports of coffee tablets.

Cochin State.—The consumption per head is about 0.53 lb. or 27 cups. The demand is mostly for raw beans and the consumption of ground coffee in tins is only 2 per cent of the total. There is practically no demand for roasted beans. The demand for tablets is estimated at about 70 cwt. out of a total demand of 125 cwt. of coffee in packages.

Bombay Presidency.—The Presidency of Bombay, adjacent to the coffee producing areas, has an average consumption of only about 6,351 cwt. a year, the *per capita* consumption being 0.038 lb. or 2 cups. So far as can be ascertained the following is the net available supply of coffee during the quinquennium ending 1937-38 :—

	Cwt.
1933-34	6,246
1934-35	7,002
1935-36	5,806
1936-37	7,149
1937-38	5,782

The figures do not indicate any increase in demand. The rail and coastal imports were comparatively high in 1935-36 when prices touched the lowest limit. Exports to foreign countries were also higher during this period and this accounts for the comparatively low figure of net available supplies in 1935-36. Imports in 1936-37 and 1937-38 were about a thousand cwt. less than those during 1935-36. Re-exports by rail averaging about 2,450 cwt. have been fairly steady. More than 90 per cent of these are estimated to be ground coffee in tins, which is due to the fact that Bombay has a large number of coffee manufacturers having a good trade outside the presidency.

Nearly 47 per cent of the local demand is for raw beans. This demand mostly comes from people from Madras, Mysore and the other coffee growing areas who are settled in the Bombay Presidency. Freshly ground coffee is getting increasingly popular as the increase in the number of electric grinders shows. From 13 grinders in August 1936 in Bombay city, it rose to 30 in 1938 and the number of restaurants using freshly ground coffee increased from 360 to about 500 in the same period.

Tea appears to be the favourite drink in the Bombay Presidency. Investigation showed that tea with a pinch of milk and half a teaspoonful of sugar is a habitual drink among the poorer classes. In spite of the high price of sugar the villager clings to his tea. Coffee with *gur* or palmyra sugar should also be a cheap proposition for the labourers and the agriculturist, as *gur* is considerably cheaper than sugar. The possibilities of serving cheap coffee to the mill-hands and to the villagers deserve to be explored. Situated close to the coffee producing and consuming areas the appeal of coffee should call forth a quicker response in the southern districts in the Bombay Presidency than elsewhere.

Analysing the demand position in Bombay city further it is found that it takes about 38 per cent of the total net imports into the presidency. The following figures of consumption in Bombay city have been worked out from the published statistics :—

	(Cwt.)
1933-34	1,504
1934-35	3,916
1935-36	1,177
1936-37	3,814
1937-38	2,007
Quinquennial average	2,484

The biennial average will give a more precise idea of the actual consumption than yearly figures as part of the excess stocks held in any year is carried into consumption in the next year. The biennial average for the year ending 1937-38 was 2,910 cwt. as against 2,546 cwt. in the previous two-year period. The *per capita* consumption in Bombay city is about 0·2 lb. while in the presidency it is only 0·038 lb. As a result of the propaganda started by the Indian Coffee Cess Committee towards the end of 1936, about 75 new restaurants are reported to be selling coffee prepared according to the directions given by the Committee.

Detailed enquiries were made regarding consumption of coffee in some of the more important towns in the different parts of the presidency. The southern areas appear to take more coffee than the northern, probably because of their proximity to the coffee producing and consuming areas.

Imports of coffee into Poona for the last 25 years were collected. The quinquennial averages worked out as under :—

Average imports of coffee into Poona.

Fiscal years.	Cwt.
1911-12 to 1915-16	242
1916-17 to 1920-21	455
1921-22 to 1925-26	524
1926-27 to 1930-31	569
1931-32 to 1935-36	555

There has apparently been an appreciable increase in consumption in the course of 20 years. The annual *per capita* consumption is higher in Poona (0·3 lb.) than in Bombay city (0·2 lb.).

Hubli is the biggest town in the Canarese speaking area of the Bombay Presidency and appears to be one of the heaviest consumers of coffee. Comparatively, the quantity consumed per head per year (*viz.*, 0·66 lb.) is more than three times that in Bombay city. The following table shows the consumption of coffee from 1931-32 to 1935-36:—

Imports of coffee into Hubli.

Fiscal years.	Cwt.
1931-32	523
1932-33	525
1933-34	544
1934-35	528
1935-36	601
Average	544

Ratnagiri, on the West Coast, consumes only about 0·008 lb. per head per annum. During the years 1932-33 to 1935-36 it imported annually an average of about 180 lb. only. The Maharashtrian and Gujarati elements in the population of the Bombay Presidency seem to prefer tea while the Canarese element takes more coffee.

Nizam's Dominions—On the basis of the figures from 1933-34 to 1937-38 the average consumption in Hyderabad State is about 2,000 cwt. as the following table indicates:—

Net available supply of coffee in Hyderabad State.

	Cwt.
1933-34	1,680
1934-35	2,125
1935-36	1,805
1936-37	2,365
1937-38	2,150
Average	2,025

The demand seems to show a slight upward tendency. About 80 per cent of the demand comes from the towns of Hyderabad and Secunderabad. The outlying districts take only about 20 per cent of the total supplies. In 1934-35 and 1935-36 out of a total consumption of 2,125 and 1,805 cwt. of coffee these two towns together consumed 1,738 and 1,378 cwt. respectively.

The *per capita* consumption in Hyderabad and Secunderabad is only about 0·3 lb. per head, which is about 20 times higher than that in the remaining portion of the Dominions. The Indian Coffee Cess Committee opened a

coffee house in Hyderabad on 1st March 1937. From a few hundred cups in March 1937, the monthly sales of coffee rose to about 24,000 cups in December 1937. In the summer months it fell off due to the belief that coffee has a heating effect on the system. Sales improved when the monsoon started. In June 1938, it was 15,000 and in July 19,000 cups a day. Another coffee house has been recently opened at Secunderabad. The demand in Hyderabad and Secunderabad when further analysed shows that ground coffee in tins including tablets formed about 39 per cent of the total imports in 1934-35 and 29 per cent in 1935-36. About 10 to 12 per cent of ground coffee is imported in tablet form. It is estimated that about 71 per cent of the demand is for raw beans, 26 per cent for tablets and ground coffee in tins and 3 per cent for freshly ground coffee which appears to be increasing.

Punjab.—The position in the Punjab may be considered typical of North-western India where the habit of coffee drinking is confined to a few upper and middle class families, Europeans, Anglo-Indians and the South Indian residents. Milk and butter milk (*lassi*) are the favourite drinks. Tea is slowly making headway but coffee has not touched even a fringe of the population. Figures of net available supply in the Punjab excluding Delhi and North-West Frontier Province can be worked out only for 1937-38 for which period figures of imports and exports for Delhi and North-West Frontier Province have been separately given. In 1937-38 only 630 cwt. of coffee were consumed in the whole of this large province. According to this the *per capita* consumption in the Punjab works out up to 0·003 lb. or 0·2 cup per annum.

The annual *per capita* consumption of the Punjab including North-West Frontier Province and Delhi is 0·007 lb. The average consumption is about 1,655 cwt. a year. The net available supply from 1933-34 was as under:—

Net available supply of coffee in the Punjab (including Delhi and N.-W. F. P.)

	Cwt.
1933-34	1,679
1934-35	1,576
1935-36	1,709
1936-37	1,601
1937-38	1,062

The demand is fairly steady. The above figures have to be taken with certain reservations since in a few cases coffee is imported along with tea. Coffee and tea come under the same classification in the railway tariff and therefore, some of the manufacturers who deal both in coffee and tea send small stocks of coffee in wagons booked for tea. However, the quantity of such stocks is not appreciable. It may be estimated at 2 per cent of the total imports of coffee.

In 1937, detailed enquiries were made in 35 towns in the Punjab of which only 14 were found to have imported any coffee, the total estimated quantity

being 67,620 lb. or about 600 cwt. a year. The demand was further analysed and sized up as under:—

Coffee imported into different towns of the Punjab in 1937.

(In lb.)

Name of town.	Raw beans.	Roasted beans.	Ground coffee in tins.	Total.
Lahore city and cantonment . .	8,000	17,000	22,000	47,000
Amritsar city and cantonment . .	<i>Nil</i>	<i>Nil</i>	865	865
Jullundar city and cantonment . .	..	..	1,260	1,260
Ludhiana	..	..	250	250
Ambala city and cantonment . .	..	..	1,000	1,000
Simla	4,000	720	1,800	6,520
Ferozepur city and cantonment . .	<i>Nil</i>	<i>Nil</i>	1,410	1,410
Jhelum city and cantonment . .	..	..	350	350
Rawalpindi city and cantonment .	2,460	..	2,460	4,920
Mianwali	<i>Nil</i>	..	10	10
Multan city and cantonment . .	..	60	240	300
Montgomery	..	<i>Nil</i>	75	75
Lyallpur	..	..	360	360
Sialkot city and cantonment . .	..	50	3,250	3,300
Total	14,460	17,830	35,330	67,620

These figures do not reflect the real demand position. A good quantity of raw beans reaches the consumer in freshly ground form. Excluding the quantity imported by hotels, the roasted beans are also put on the market in ground form. On the basis of detailed investigations which were conducted in the above places, the actual demand is analysed as under:—

	Quantity. lb.	Percentage of the total.
(i) Raw beans sold as such	11,360	16·9
(ii) Roasted beans	4,720	7·0
(iii) Roasted beans freshly ground and raw beans roasted and freshly ground	15,710	23·4
(iv) Ground coffee in tins	35,330	52·7
	<u>67,120</u>	<u>100·0</u>

NOTE.—The difference in total quantity of coffee as given in this table and that of the above is due to the loss in roasting and grinding, which is estimated at about 16 per cent.

About 53 per cent of the total requirements were for ground coffee in tins. Freshly ground coffee comes next with 23·4 per cent. It is understood that the demand for freshly ground coffee is increasing with the increase in the number of electric grinders in the chief towns of the Punjab. The statement on previous page further shows that the demand for raw beans is confined to Lahore, Simla and Rawalpindi. This is due to the fact that there is a fairly good number of South Indians residing in the above places who invariably buy raw beans. Roasted beans are usually bought by European hotels. Lahore, Simla, Sialkot and Multan are the only places where roasted beans find a sale. Towns like Amritsar, Jullundar, Ludhiana, Ambala, Ferozepore, Jhelum, Montgomery and Lyallpur import only ground coffee in tins. The demand in these towns is comparatively small. It ranges from 75 lb. a year to 1,410 lb. a year.

Lahore has the highest *per capita* consumption in the Punjab with 0·09 lb. or 5 cups a year. Rawalpindi comes next with 0·05 lb. Towns like Jullundar, Montgomery, Multan and Ludhiana take very little coffee, the *per capita* consumption ranging from 0·002 lb. to 0·003 lb. per annum. More than two thirds of the demand in the Punjab is concentrated in Lahore. Lahore was studied closely and it was found that more than 50 per cent of the raw beans were roasted and ground before sale. Likewise about 75 per cent of the imported roasted beans are sold in freshly ground form. The actual demand was estimated to be as under :—

	lb.
(i) Raw beans sold as such	4,900
(ii) Roasted beans sold as such	4,250
(iii) Raw beans freshly roasted and ground and roasted beans freshly ground	13,320
(iv) Ground coffee in tins	22,000
Total	44,620

About 50 per cent of the demand is for ground coffee in tins and about 32 per cent for freshly ground coffee.

Simla is the next biggest consuming centre in the Punjab. More than 60 per cent of the demand is for raw beans. The South Indian residents in Simla prefer to purchase their coffee in raw form and hence the higher proportion of raw beans. More than 75 per cent of the consumption is understood to be during the season between April and October, when the Governments of India and the Punjab are located there.

Rawalpindi follows with a consumption of about 4,920 lb. and a *per capita* consumption of 0·05 lb. per annum. There is a fairly large population of South Indians and two or three electric grinders are in operation.

Delhi.—According to a survey conducted in 1935, the consumption in Delhi province was about 350 cwt. and is confined to the city. On this basis the annual *per capita* consumption works to 0·1 for Delhi city including New Delhi. As in the Punjab, a fair quantity of raw and roasted beans reach the consumer in ground form. Hotels and restaurants sell in retail about 1,000 lb. of freshly ground coffee. The demand for raw, roasted beans and freshly ground coffee is 24, 7 and 27 per cent respectively of the total, while the remainder *viz.*, 42 per cent is for ground coffee in tins and tablets. The demand for freshly ground coffee represents 39 per cent of the total demand for ground coffee.

North-West Frontier Province.—About 200 cwt. of coffee are consumed in North-West Frontier Province. The demand for ground coffee in tins is 60 per cent of the total. Freshly ground coffee claims only 24 per cent while raw beans form 10 per cent. The consumption is mostly confined to Europeans and Anglo-Indians in military centres. Pathans do not, as a rule, drink coffee.

United Provinces.—The average consumption of coffee in the United Provinces of Agra and Oudh is only about 600 cwt., the annual *per capita* consumption being 0·001 lb. The consumption per head is lower than that in the Punjab. Consumption has been more or less steady as the following shows :—

Consumption of coffee in the United Provinces.

	Cwt.
1933-34	680
1934-35	600
1935-36	550
1936-37	557
1937-38	574
Average	592

In 1937, detailed investigations were made into the nature of the demand, and it showed that more than 80 per cent of the demand was for ground coffee in tins. Freshly ground coffee has not become as popular as in the Punjab. There are only three or four electric grinders in the whole province. More than 95 per cent of the total consumption is confined to the towns; the rural areas do not know of coffee. According to the above investigations the estimated consumption in the chief towns was as under :—

Estimated consumption of coffee in some important towns of the United Provinces.

	Cwt.
Benares	175
Lucknow	130
Meerut	80
Dehra Dun	44
Cawnpore	39
Agra	35
Jhansi	31
Naini Tal	30
Mussoorie	16
Haldwani	13

The annual *per capita* consumption was highest in Benares being 0·1 lb., as there is a fair element of permanent and floating South Indian population. Lucknow comes next with 0·06 lb. per head. The consumption in Agra was extremely low being only 0·02 lb. per head.

Bengal.—The *per capita* consumption is 0·002 lb., i.e., scarcely one-tenth of a cup is consumed per head per annum. There is little to choose between the United Provinces and Bengal, though things are a shade better in Bengal than in the United Provinces. The following indicates the position :—

	Cwt.
1933-34	1,007
1934-35	762
1935-36	1,356
1936-37	1,505
1937-38	1,435
Average	1,273

The average annual consumption for the 5 years ending 1937-38 is about 1,300 cwt., of which about 1,200 cwt. are consumed in Calcutta. The annual consumption in Chittagong, Darjeeling, Dacca and Jalpaiguri is estimated at 31, 22, 18 and 5 cwt. respectively. Detailed investigations showed that about 30 per cent of the raw beans were sold in freshly ground form, while about 50 per cent were ground and tinned by the various manufacturers. The remainder was taken by the consumers in the shape of raw beans.

Sind.—In Sind and British Baluchistan, the *per capita* consumption is only 0·007 lb. per annum. The average annual demand is about 300 cwt. Most of this is consumed by South Indians, Europeans and Anglo-Indians. Few Sindhis take coffee. More than two-thirds of the demand is for ground coffee in tins. The demand for freshly ground coffee, as in other places, is increasing. Raw beans are only bought by South Indians residing in Karachi and Hyderabad.

Central Provinces.—The *per capita* consumption is as low as in Northern India being only 0·003 lb. per year. In 1936-37 and 1937-38 about 600 cwt. of coffee were consumed. About 21 per cent of the demand is for raw beans and the rest for ground coffee in tins. The demand for freshly ground coffee was found to be negligible. Only one firm was found to be selling freshly ground coffee. As in the North, the sales are confined to towns. Coffee is an unknown drink in the rural areas.

Assam.—Assam, the home of tea gardens, consumes very little coffee. The entire consumption of coffee is confined to Shillong. The *per capita* consumption is naturally one of the lowest in India, being only 0·0004 lb. per annum, the demand being about 40 cwt. per year.

Bihar.—Bihar is one of the poorest provinces from the point of view of consumption of coffee. The *per capita* consumption for 1937-38 works out to 0·0008 lb. The bulk of the imports is ground coffee in tins. 99 per cent of the net available supply is distributed in Patna, Tatanagar and Ranchi. The rural areas know nothing about coffee. Even in the urban areas, coffee drinking is confined to a few Indians, Anglo-Indians and Europeans.

Orissa.—Proximity to the coffee consuming areas in the South appears to have had a very slight effect on the people of Orissa. The *per capita* consumption for 1937-38 works out to 0·006 lb.

B.—Qualitative requirements.

Details of the quality in demand in the different provinces and States are discussed below :—

Madras Presidency.—Detailed investigations were made into the nature of demand in the important districts and towns in the Madras Presidency. The upper middle classes as a rule go in for “Peaberry”, “O”, “A” or “B”. The poorer classes buy inferior grades of *arabica* and *robusta*, such as “Triage”, “Blacks and Bits” and coffee husk. Freshly ground coffee is finding favour with the richer classes and its demand is increasing. The demand for tinned coffee mostly comes from Europeans and Anglo-Indians. Tablet and inferior mixed tinned coffees are used by the working classes. The demand for better grades of “French” coffee is apparently limited. The manufacturers of pure tinned coffee usually buy better grades of *arabica* while “French” coffee is frequently prepared with “B” and “C” and “Triage” and tablet manufacturers mostly buy *robusta* and cherry “Triage”, “Blacks and Bits”. The merchants who sell freshly ground coffee generally use lower grades of cherry coffee with the result that the demand for high grade raw beans is, to some extent, being replaced by cheaper grades.

In Madras city, the bulk of the demand is for Plantation "A" and "Peaberry". But since 1936 the demand for cherry (Native) "Peaberry" is increasing, mostly due to polishing and colouring. The inexperienced consumer is attracted by the bright colour of polished and coloured coffee. In Salem, the demand for plantation "A", "Peaberry" and "B" is pronounced. *Robusta* and "Triage" have also a good market. In Trichinopoly, Tanjore and Madura there is a good demand for "Peaberry" and bold "O". The market for coloured cherry "A", "B" and "Peaberry" is good in Madura and Circars and *robusta* flats are in demand in both the places. The consumption of tinned coffee is negligible in these areas. Cherry "Peaberry" and "A" have a large sale in South Canara. The bigger restaurants are apparently changing from "Peaberry" to bold "A" and the smaller ones prefer inferior grades of cherry (Native) *arabica* and *robusta*. Udipi, an important *mofussil* town in South Canara goes in mostly for *robusta* and inferior grades of cherry. The demand for coffee in Malabar is less than in other parts of the Presidency. The Muslims as a class take tea. In North Malabar there is good demand for black coffee (coffee without milk) from the poorer classes. "Triage" and "Blacks and Bits" are generally used for preparing this kind of coffee in the cup.

Mysore State.—The demand position is almost the same as in the Madras Presidency. Roasting and grinding is a household practice. An average upper class home consumes about 500 lb. a year and a middle class one about 375 lb. They both invariably buy raw beans. The lower middle classes buy coffee powder, and a family consumes from 100 to 150 lb. a year. The hotels usually mix chicory with coffee. The proportion of chicory is believed to be 15 to 30 per cent of the mixture. The upper middle classes go in for "Peaberry" and bold "A" or "O", the middle classes for "A" and the poorer classes for ground coffee and "Blacks and Bits". Middle class families take coffee at least once a day in the morning. The Muslims appear to prefer tea. But the rapid growth of coffee hotels has done much in increasing the coffee drinking habit.

Travancore State.—The bulk of the demand is for the lower grades. With the average consumer, cost is the primary factor. The demand for top grades is negligible. Not more than about 10 per cent of the demand is for "Peaberry" and bold grades. The middle classes seem to buy much polished and coloured *robusta* and lower middle classes go in for "Triage" and "Blacks and Bits". The working classes are provided with coffee which is mostly husk.

Cochin State.—Brahmins and Nairs buy "Peaberry" or "Bold Flat" beans. Others go in for "A", "B" and "C" grades of plantation and cherry. There is some demand for "Blacks" in the southern taluks. "Triage" is popular with the poorer classes all over the State. Nilgiri coffee is preferred as it is supposed to give strength and good flavour in the cup. A greenish blue colour is preferred to dull green by the consumers. A well-shaped, heavy bean is claimed to give a better cup quality. There is practically no demand for roasted beans. The ground coffee prepared from "Triage" and "Blacks and Bits" by local retailers is purchased by the poor classes. Coffee tablets appeared to be popular for a little while after their introduction but when once the novelty was over the demand went down. Some of the small tea shops and coffee clubs still sell tablets on account of their cheapness. Brahmins as a community prefer coffee while Muslims prefer tea. The Nairs and the middle classes consume coffee and tea alike but, on the whole, tea is a greater favourite than coffee.

Bombay Presidency.—Belgaum, Dharwar and Canara, situated as they are in close proximity to the Mysore State, are more coffee minded than other parts of the Bombay Presidency. Discrimination regarding size and colour of beans is made by a class of the population in the above area. In rural areas the poorer classes buy tablets. In most of the other parts cheap types of flats are sold. The demand for raw beans is confined to South Indians. The local people mostly go in for tinned coffee and the demand for "French" coffee appears to be greater than that for "Pure" coffee. In Bombay city the demand for freshly ground coffee is increasing and as a result of the propaganda conducted by the Indian Coffee Cess Committee, coffee of better quality is being used in a good number of Irani restaurants. As in other cities, the Europeans and Anglo-Indians buy freshly ground coffee and also better grades of tinned coffee. The local inhabitants buy cheaper types of tinned coffee. Plantation "A" and "B" grades are generally used for preparing freshly ground coffee.

Nizam's Dominions.—More than 70 per cent of the demand is for raw beans. More than 50 per cent of this is for "A" and "B" sizes of *arabica* "Plantation" coffee. As the consumers prefer bluish green colour of the bean there is a good demand for polished coffee. The demand for "Peaberry" comes from the upper classes and barely constitutes 5 per cent of the total demand for raw beans. The poorer classes go in for "Triage" and "Blacks and Bits". About 30 per cent of the demand is for ground coffee including tablets. The demand for "French" coffee is considerable and forms more than 70 per cent of the total demand for ground coffee. A large number of restaurants use "French" coffee. Most of the demand for "Pure" coffee in tins comes from Europeans and Anglo-Indians and from middle class Indian families, and it is about 15 per cent of the total demand for ground coffee. The working classes are satisfied with tablets which are usually heavily adulterated.

The Arabians residing in the city of Hyderabad who are fond of coffee use *arabica* plantation "A" quality in their coffee houses (*qahwah khana*). The demand for coffee mostly comes from Hyderabad city and Secunderabad and from the Madrasi residents on the southern border.

Punjab.—The demand in the Punjab may be taken as fairly typical of Northern India. Raw beans mostly find favour with the South Indians who prefer "Peaberry". Roasting and grinding are practically unknown to the consumers in the Punjab. There is a certain demand for roasted beans from European hotels and grocers catering to European and upper class Indians. The demand for freshly ground coffee is increasing. Ground coffee in tins is generally asked for by Indian hotels, upper class Indians, Europeans and Anglo-Indians. The demand for "French" coffee represents about 90 per cent of the total requirements of tinned coffee. Its popularity appears to be due not only to its comparative cheapness but to the special taste developed by a section of the consumers for coffee with chicory.

Bengal.—The demand for raw beans mostly comes from South Indians; "Peaberry" is their favourite. The inferior grades like "Triage" and "Blacks and Bits" are not asked for. "A" and "B" grades are used for preparing freshly ground coffee. There is practically no market for roasted beans and tablets. The demand for freshly ground coffee is appreciable and is increasing. Manufactured coffee in tins is usually popular with Europeans and Anglo-Indians. The demand for "French" coffee is more than that for

"Pure" coffee among this class of population. Small quantities of imported coffee essences and manufactured foreign coffee are taken only by Europeans.

United Provinces of Agra and Oudh—Ground coffee in tins is in greater favour. The demand for freshly ground coffee, about 2,240 lb., mostly comes from Lucknow, Dehra Dun, and Allahabad and for raw beans from Benares and Dehra Dun. A small quantity of tablets is sold at Dehra Dun, Meerut and Agra.

C.—Seasonal variations.

While in the North, coffee is considered to be a cold weather drink, in the South it is taken during all seasons. In order to get a correct perspective of the variation of supply and demand it is better to divide the country into (1) the producing areas and (2) non-producing areas. As mentioned before, the producing areas happen to be the chief consuming areas.

(1) PRODUCING AREAS.

Most of the coffee starts moving to the various centres of distribution and consumption immediately after curing. The movement of coffee is at its peak soon after the harvest. The merchants at the curing centres purchase their requirements at this time and the growers who send their stock to coast towns for curing are usually anxious to sell the stock before the monsoon starts, i.e., towards the end of May on account of the difficulty of storage. The following figures of movement from the chief exporting centres indicate the position :—

Movement of coffee from the chief exporting centres in 1937.

	Cwt.
January	14,559
February	16,483
March	16,107
April	13,742
May	17,414
June	12,338
July	5,771
August	5,154
September	2,051
October	3,371
November	4,639
December	13,487

Picking starts towards October and there is a definite upward trend from that month. May is the heaviest month as the planters as well as the wholesalers are anxious to move stocks from the coast on account of the approaching monsoon. There is a definite sag in the movement from July till it touches the lowest figure in September. July to September are pre-harvest months and the movement of traffic during this period is about 10 per cent of the total. The consuming centres in South India get their stocks between December and June. The manufacturers and wholesalers also buy their requirements during this period.

As discussed above the movement of stock is heaviest from December to June. In the Madras Presidency, the demand from the consumers is fairly steady as the following figures of retail sales taken from the books of a typical dealer in Madras indicate :—

Retail sales (in cwt.) in Madras, 1937.

January	12
February	9
March	11
April	10
May	10
June	11
July	11
August	12
September	11
October	12
November	10
December	12

The consumers do not obviously make any difference between winter and summer months. The movement of coffee from Virudhunagar, which is one of the chief distributing centres in the Madras Presidency, also does not show any periodicity.

As in the Madras Presidency, the demand for coffee in the Mysore State as a whole is also fairly steady, though imports during the first half of the year tend to be higher than those during the latter half (see Appendix XXII). The figures for the import of coffee into Bangalore city and cantonment in 1936, are given below :—

Imports of coffee (in cwt.) into Bangalore city and cantonment, 1936.

January	523
February	708
March	863
April	672
May	1,101
June	689
July	447
August	502
September	497
October	514
November	288
December	507

The season in Bangalore starts from March and continues till the latter part of June. Therefore, the supplies during these four months appear to be comparatively heavy. The imports from December to May are higher than those from June to November, the average being 493 cwt. per month in the former period and 387 cwt. in the latter.

The periodicity of imports into Travancore State are shown in Appendix XXII. Here, as in other places, there are no appreciable seasonal variations in demand.

The import figures as given in Appendix XXII indicate that June, July and August are the peak months in the Cochin State. In these monsoon months, coffee is apparently more in demand than during the rest of the year.

(2) NON-PRODUCING AREAS.

In the Nizam's Dominions the demand drops during the hot months of April, May, June and July (see Appendix XXII), which are the lean months. The monsoon starts in June and an upward tendency in consumption is visible from July. The actual sale figures in 1935 of a prominent dealer are given below :—

Sales of coffee (in lb.) of a dealer in Nizam's Dominions.

January	550
February	510
March	96
April	358
May	48
June	192
July	502
August	192
September	406
October	240
November	527
December	476

Demand sagged in March. A spurt in July, a big drop in August and fairly steady sales from September to February was the position.

In the Bombay Presidency large stocks of coffee are not held by merchants and as such the periodical fluctuations in the imports of coffee may be taken roughly to reflect the variations in demand for coffee. The requirements of the consumers are more during the cold months. Supplies drop from March.

In the Punjab and Delhi the winter season almost coincides with the arrival of the crop into the distributing markets in the South, during which period the demand for coffee is relatively high.

The following variations in demand in Delhi and two typical towns in Punjab show the position :—

Imports of coffee (in lb.) in 1936.

	Delhi.	Lahore.	Amritsar.
January	8,400	5,000	100
February	5,224	4,500	85
March	4,480	5,000	70
April	3,820	4,000	20
May	6,372	3,300	15
June	6,832	2,000	10
July	560	800	Nil
August	1,008	800	Nil
September	3,696	3,100	40
October	8,624	7,000	250
November	8,624	5,000	90
December	7,840	6,500	175

While about 60 per cent of the imports into Delhi are in winter months, the imports into Lahore in winter are about 70 per cent of the total and into Amritsar more than 90 per cent. So far as Delhi is concerned, October and November, are the peak months. January comes next followed by December. May and June are good because of the orders placed during the close of the season in the South. The imports are lowest in July. As the Government of India moves to Simla in April and returns to Delhi only in October, the imports during these 6 months fall by nearly half. The Lahore and Amritsar figures show that by far the largest quantity is imported in October presumably because the dealers obtain supplies to meet the demand which starts in full force during this month; next comes December with about 12 per cent of the total imports, followed by January, November, March and February in that order. From April the imports show a decline till the bottom is reached in July and August. It is clear that in the towns situated in the plains of the Punjab, the largest quantity of coffee is imported during winter months. This may probably be due in some measure to the fact that coffee is said to have a heating effect on the system, and its use is avoided in summer months when cold drinks [butter-milk (*lassi*), squashes, etc.] are the order of the day. Furthermore, the exodus of the consumers of coffee (Europeans, and upper class Indians) to hill stations during summer is also responsible for decrease in the local demand for coffee, as for example in Delhi, where information was collected from a few typical dealers whose sales were as under :—

Sale of coffee (in lb.) by a few dealers in Delhi in 1935.

January	321
February	253
March	169
April	105
May	80
June	77
July	88
August	88
September	81
October	329
November	265
December	354

The imports of coffee (average of 3 years ending 1938) into Bengal are shown in Appendix XXII. The decrease in demand in the summer months is not so pronounced as in the case of the Punjab. However, the supplies tend to get less during May to September.

The periodicity of demand in other provinces and States in Northern India is approximately the same as in the Punjab. (See Appendix XXII).

D.—Trend of requirements.

(1) INDIAN COFFEE.

The trend and periodicity of exports have already been discussed in Chapter I. Figures of consumption of coffee in India before 1932-33 are not available. But the estimated net available supplies for 5 years, *i.e.*, from 1932-33 to 1936-37 seems to indicate a gradual increase in consumption :—

	(Cwt.)
1932-33	305,204
1933-34	329,677
1934-35	453,398
1935-36	435,340
1936-37	437,627

Detailed investigations, made in the different markets, showed that coffee drinking had definitely increased in the last decade. The increase in consumption in Madras Presidency, Mysore, Travancore and Cochin States is more pronounced than in other places. But the coffee habit is on the increase in other provinces and States, though not to the same extent as in the producing areas.

A comparison of consumption in 1933-34 and 1937-38 in some of the provinces and States indicates the position :—

	1933-34. (Cwt.)	1937-38. (Cwt.)
Nizam's Dominions	1,680	2,150
Central Provinces and Berar	141	597
Bihar and Orissa	223	859
Bengal.	1,007	1,435
Assam	38	44
United Provinces	680	574
Punjab including North-West Frontier Province and Delhi	1,679	1,062
Bombay	6,256	5,782

It will be seen from above that, excepting Bombay, the United Provinces and the Punjab including North-West Frontier Province and Delhi, all other areas show an appreciable increase in consumption. Apart from the figures given above, enquiries showed that with the passage of time, the upper classes in the urban areas in the Northern India were slowly taking to coffee. Well directed propaganda should speed up this process.

Madras Presidency and Mysore State.—Investigations show that the number of coffee hotels has increased all over the presidency. From urban areas the habit is spreading into the rural parts. Formerly it used to be mostly a drink of the upper and middle classes, while now the lower middle classes cannot get on without it. In places where the middle classes were coffee drinkers the rest of the people are following in their wake. From “no drink” or drinks like butter-milk, the coffee habit seems to be slowly taking shape. Prohibition, where introduced, has apparently given a good fillip to coffee drinking.

Nizam's Dominions.—The increase in consumption shows that there is an upward trend.

Punjab.—Investigations made in some of the important towns in the Punjab show that the demand for coffee is small but steadily increasing. Freshly ground coffee particularly has a wider appeal than other kinds and its demand is increasing.

Other areas.—The demand in other provinces and States in Northern India seems to be fairly steady. Figures of consumption of raw and roasted beans, freshly ground coffee and ground coffee in tins (including tablets) for a series of years are not available. But investigations tend to show that the habit of buying freshly ground coffee is definitely increasing from year to year. The increase in sale of freshly ground coffee by an important dealer in Madras has already been described. This is typical of dealers in other parts of the country.

Statistics of the sale of raw and roasted beans, ground coffee in tins and tablets in some of the important towns, for 1934-35 and 1935-36 were collected from some of the chief manufacturers and are given below :—

Sale of coffee in important towns.

	Raw beans.		Roasted beans.		Ground coffee in tins.		Tablets.	
	1935-36.	Percentage increase or decrease on 1934-35.	1935-36.	Percentage increase or decrease on 1934-35.	1935-36.	Percentage increase or decrease on 1934-35.	1935-36.	Percentage increase or decrease on 1934-35.
	Cwt.		Cwt.		Cwt.		Cwt.	
Madras	19,377	+10	10	—33	3,194	+11	3,379	—5
Calcutta	1,754	+49	129	+28	944	—8	34	+13
Karachi	29	—32	...	...	83	+21	9	—52
Bombay	478	+65	170	—8	1,360	—7	577	—1
Hyderabad . . .	875	—30	...	...	245	+2	225	+0.5

The above figures which were collected from a few important manufacturers are available only for two years and as such they must be taken with reservations. They may serve to indicate the probable general trend in particular areas.

While Calcutta and Bombay registered a large increase in the sale of raw beans, Karachi and Hyderabad showed a decline. With regard to roasted beans, the fall in sales is general except in Calcutta. Ground coffee in tins increased only in Madras and Karachi. The sale of tablets appears to have gone down in all places except at Calcutta and Hyderabad.

(2) FOREIGN TINNED COFFEE.

Imports of foreign tinned coffee are small amounting to only about 500 cwt. a year. They seem to be on the increase. Imports in 1933-34 were only about 250 cwt. and about 550 cwt. in 1937-38, showing an increase of 120 per cent in the course of 5 years. The selling price of foreign coffee approximates to that of Indian tinned coffee and the increase in demand appears to be

due to the fact that foreign packed coffees have better appearance, are generally well packed in inert gas, are not so finely ground as Indian tinned coffee and rank high from the point of view of liquoring quality. With plenty of excellent Indian coffees available for local manufacturers it seems surprising that there should be any imports of ground coffee.

E.—External requirements.

(1) EXPORTS THROUGH LAND FRONTIERS.

As discussed in the Supply chapter, a negligible quantity of only about 800 lb. of coffee, mostly in tins, is annually exported by land over the Indian frontiers. About 500 lb. are sent to the British delegation in Kabul and the military posts at Drosh, Chitral and Gilgit and the remainder is despatched to Wana for the military posts.

(2) EXPORTS BY SEA.

Practically the whole of the exports consist of *arabica*. More than 60 per cent of the average exports are taken by United Kingdom and France, and about 15 per cent by Norway and Belgium. While the United Kingdom imports only quality coffees from India, the Continental countries mostly take cherry and “monsooned” coffee.

(a) *Empire countries*.—“The history of coffee houses ere the invention of clubs was that of the manner, the morals and politics of a people” said Disraeli. The part played by the coffee houses in London in the first half of the eighteenth century is a matter of history. Though the consumption of coffee in United Kingdom is comparatively poor, London is still the premier market for the quality coffees of the world. The *per capita* consumption of coffee in United Kingdom is about 0·7 lb. as against 9 lb. of tea. London is an important re-export market as well, though her re-export trade is slowly deteriorating. The best of the “mild” coffees get to London and the Continent still looks to London for them. Besides providing an important export market, United Kingdom finances the coffee exports to Europe and also helps the planters with both fixed capital and working expenses. East Africa seems to have taken full advantage of the facilities offered by the London importers and merchant bankers. It is also understood that London finances a fairly large proportion of the Brazilian and Costa Rica plantations and Brazilian trade with Europe. Further, London is the centre of arbitration between South America and Europe.

(i) *Qualitative*.—More than 95 per cent of the average exports from India to the United Kingdom consist of *arabica* plantation coffee, 90 per cent of which again belong to the top grades. Quality in the cup or liquoring test is considered the best commercial test in the United Kingdom. Acidity, intensity, body and character are the chief factors that determine the quality of the infusion. From each sample a small portion is roasted and ground and of each an amount equal to the weight of a penny is placed in a small bowl and boiling water poured over it. It is tested after it settles and cools.

Size is considered as a definite indication of quality. Other conditions being equal, the bolder beans are preferred as larger size is understood to denote more fully developed beans which give better liquor. Colour is another important factor which the buyer considers. Particular shades of colour in coffees coming from particular areas are looked for and trade terms used to denote the different shades are “coloury”, “greenish”, “bluish”, “greyish” etc. “Pales” lower the liquoring quality and the percentage “of Pales”

is an important point in valuing coffee. A round thick bean is considered superior to a long one as the former gives a more even roast. Evenness of beans is also an important factor as unevenness definitely spoils the roast.

(ii) *Quantitative.*—The following table indicates the imports of coffee into the United Kingdom from 1926 to 1938 :—

Imports of coffee (in thousand cwt.) into the United Kingdom.

Countries.	Annual average 1926-30.	Annual average 1931-35.	1934.	1935.	1936.	1937.	1938.
British East Africa . . .	228	239	131	218	135	157	155
India . . .	55	44	49	30	79	23	33
Other Empire countries . .	5	4	4	6	5	6	4
Total Empire countries . .	288	287	184	254	219	186	192
Costa Rica . . .	264	234	237	178	174	149	175
Colombia . . .	29	19	18	5	5	3	1
Brazil . . .	10	28	23	2	3	4	8
Other foreign countries . .	62	64	69	39	34	28	25
Total foreign countries . .	365	345	347	224	216	184	209
Grand Total	653	632	531	478	435	370	401

The gross annual average import into the United Kingdom before the 1914 War was 810,000 cwt. A steady deterioration in imports is one of the disturbing factors.

From 810,000 cwt. in the quinquennium ending 1913, it dropped to 401,000 cwt. in 1938. The consumption of coffee in United Kingdom has by no means gone down but the re-export trade has suffered a set-back. India's share of the total imports dropped from a pre-War average of 87,000 cwt. to 44,000 cwt. in the lustrum ending 1935 and further dropped to 43,000 cwt. in the lustrum ending 1938. While India's share of the total imports dropped from 10·7 per cent in the lustrum 1909-13 to 9·7 per cent in 1934-38, East Africa's share rose from 2·3 per cent to 35·9 per cent in the same period.

The Ottawa Preference came into force in 1933 and while the share of imports from India rose from 7·5 per cent in the quinquennium ending 1933 to 9·7 per cent in the following quinquennium, the share of Empire countries rose from 43 per cent to about 47 per cent in the same period and East Africa's share fell from 38 per cent to 35·9 per cent. The share of Costa Rica's imports into United Kingdom actually rose by about 4 per cent during the post-Ottawa period, Costa Rica's share being 37 per cent in the quinquennium ending 1933 and 41 per cent in the period ending 1938.

It is useful to investigate the reasons for the success of Costa Rica in the United Kingdom market. A regular supply of uniform quality, carefully graded is considered to be the chief cause for the position that Costa Rica holds in the London market. Indian coffee in the United Kingdom must be regarded as a special trade inasmuch as only the best qualities or home trade marks are usually exported. Of late there has been a complaint of a certain lack of colour and a high proportion of "Pale" beans in the Indian coffees. (This aspect is dealt in more detail in the chapter on Preparation for market). But it is understood that a great deal of these defects were eliminated in the shipments in 1938 and 1939. Recently a systematic examination of every consignment of coffee from India to London was made and reported on as to external appearance, the roasted appearance, the percentage of "Pales" and taste after being cupped. The results are discussed later in the chapter on Grading and standardisation.

The major portion of Costa Rica coffee is imported in husk into United Kingdom. In 1933-34, 194,000 cwt. were imported in husk as against 56,000 cwt. cured. London cleaned appears to have been sold at a premium of about Rs. 4 per cwt. But it seems that this partiality for London cleaned is slowly declining. Only the top grades of Costa Rica are exported to England; the rest goes to United States of America or Continental markets. It is claimed that in the preparation of coffee essences a higher percentage of extract can be made out of Costa Rica than other coffees.

While East African trade shows an all round progress, India has suffered. The employment of a coffee taster in East Africa by the Coffee Board of Kenya has, to a certain extent, helped her to cater for the London market. Costa Rica and East Africa are India's biggest competitors. Besides supplying the fixed and the working capital for a considerable number of plantations in East Africa, London practically finances the whole of the East African coffee trade with Europe. The financial backing given to the planters and coffee trade of Costa Rica and Kenya by some of the big importers and merchant bankers in the United Kingdom, the particular care taken by Costa Rica and Kenya in despatching the top grades to United Kingdom, the close contact which Kenya had been able to establish between the trade in London and Kenya by having representatives of London trade in Nairobi, and the concentrated propaganda carried on by Kenya in the United Kingdom are some of the reasons for the large share taken by East African and Costa Rica coffees. The depreciation of exchange *vis-a-vis* sterling, also gave Costa Rica an advantage.

London's position as a re-export market is being gradually undermined as the following figures show :—

Re-exports of coffee (in thousand cwt.) from United Kingdom.

Pre-War average	600
1925-29	262
1930-34	347
1935	233
1936	155
1937	85
1938	122

The trade restrictions on the Continent and the direct contacts made by the exporting countries are, to a considerable extent, responsible for the shrinkage in the re-export trade. The re-export trade of London has suffered

greatly owing to the fact that Germany and Austria are no longer taking Indian coffee. Germany was one of the best customers of United Kingdom. In 1926-30 she took, on an average 55 per cent of the total re-exports from United Kingdom, *i.e.*, about 170,000 cwt. In 1934 her imports from United Kingdom went down to 95,000 cwt. and continued gradually going down.

Re-exports of coffee (in thousand cwt.) from United Kingdom to Germany.

1925-29	.	.	.	.	.	.	.	.	.	.	145
1930-34	.	.	.	.	.	.	.	.	.	.	165
1934	.	.	.	.	.	.	.	.	.	.	95
1935	.	.	.	.	.	.	.	.	.	.	53
1936	.	.	.	.	.	.	.	.	.	.	29
1937	.	.	.	.	.	.	.	.	.	.	15
1938	.	.	.	.	.	.	.	.	.	.	10

In 1938, it came up to scarcely 8 per cent of the total re-exports from United Kingdom.

Re-exports to Holland, another import market for coffee from United Kingdom, also appear to have dropped from 1936 onwards :—

Re-exports (in thousand cwt.) from the United Kingdom to Holland.

1925-29	.	.	.	.	.	.	.	.	.	.	33
1930-34	.	.	.	.	.	.	.	.	.	.	32
1935	.	.	.	.	.	.	.	.	.	.	45
1936	.	.	.	.	.	.	.	.	.	.	25
1937	.	.	.	.	.	.	.	.	.	.	7
1938	.	.	.	.	.	.	.	.	.	.	27

From an annual average of 35,000 cwt. in the quinquennium ending 1930, it has fallen to about 26,000 cwt. in the lustrum ending 1938.

The pre-War (1914) average consumption of coffee in the United Kingdom was 253,000 cwt. It rose to 316,000 cwt. in the quinquennium ending 1929. The following table indicates the position in later years :—

Consumption of coffee and tea in the United Kingdom.

	Total coffee. (Thousand cwt.).	Per capita.	
		Coffee. lb.	Tea. lb.
1930-34	310	0·75	9·42
1935	294	0·70	9·42
1936	303	0·72	9·30
1937	302	0·71	9·20

It is understood that the big margin between the wholesale and retail prices is a serious impediment to the increase in consumption of coffee, especially as coffee has to fight its way against tea, the retail price of which is comparatively much lower. In 1937 the retail price of coffee ranged from *sh.* 2/4 to 2/10 a lb., while for tea it was 8½d. a lb. Naturally the consumer prefers to go in for tea rather than coffee.

Though the quality coffees of the world get to London and coffee is primarily valued there on the liquoring test by the trade, it has been observed that the quality of coffee served in private houses and restaurants is not of a high standard. The habit of serving "white" coffee mixed with milk, unlike the Continent where milk is supplied to suit the taste of the consumer, is another feature of the restaurants in United Kingdom. It also appears that the consumers in houses do not use as much quantity of coffee powder as they should for preparing coffee. Therefore an instructional campaign accompanied by practical demonstration of the best methods of preparing coffee in the cup should help to increase the consumption of coffee in the United Kingdom. The Imperial Economic Committee in the 19th report have laid stress on this point, and the Indian Coffee Market Expansion Board in London is working in this direction.

Canada.—Canada tops the Empire countries in consumption of coffee. The *per capita* consumption was about 3·4 lb. in 1937. Canada imported about 336,000 cwt. in 1937. Imports into Canada have been steadily increasing as the following indicates :—

Imports of coffee (in thousand cwt.) into Canada.

[illegible]

Imports from United Kingdom amounted to 19,000 cwt. in 1936, 13,000 cwt. in 1937 and 15,000 cwt. in 1938. From 1926, Empire countries were placed on the free list while coffees from other sources were subjected to duty and consequently the percentage of Empire coffee trade has considerably increased. Colombia, Jamaica and Kenya are said to be popular while imports of Mocha and Java coffees are limited. Imports from British East Africa amounted to 85,000 cwt. in 1935, 105,000 cwt. in 1936 and 120,000 cwt. in 1937. This shows the possibilities of the situation. At present Indian direct exports to Canada are negligible. They were only 100 cwt. in 1935-36, 353 cwt. in 1936-37 and 485 cwt. in 1937-38. This seems to show a lack of enterprise as compared with East Africa. Improvements in roasting, grinding and brewing as also the increasingly large number of U. S. A. tourists visiting the country are said to be responsible for this increase in total imports. As a partiality for the large sized beans seems to be one of the features of the Canadian market, Indian coffee should be able to make headway against the smaller beans from elsewhere. It is understood that in recent years Canada has been importing a small quantity of *liberica*.

Union of South Africa.—The average annual consumption of coffee is about 260,000 cwt. The following are the imports for the last 8 years :—

Imports of coffee (in thousand cwt.) into South Africa.

[illegible]

The Dutch element in the population is responsible for the comparatively high consumption of coffee. Imports are almost confined to raw beans. Imports of roasted and ground coffee do not exceed 55 cwt. Brazilian Rio type seems to be the most popular and is used for blending with East African coffee. *Robusta* from Netherlands East Indies is also a favourite. Colonial preference has increased the imports from East Africa. It amounted to 83,000 cwt. in 1935 and was 116,000 cwt. in 1936 and 110,000 cwt. in 1937. Indian exports are now next to nothing—only about 300 cwt. of cherry-dried coffee. Most of the shipments go through commission agents who book orders on samples. India should be able to find a larger market in the Union if only on account of the Indian population in South Africa.

Australia.—Australia takes after the mother country. Tea is the most popular drink as in the United Kingdom. The *per capita* consumption of coffee in 1937 was 0·59 lb., while that of tea was 7 lb. The average consumption for 3 years ending 1937 was 36,000 cwt. The following are the imports into Australia :—

Imports of coffee (in thousand cwt.) into Australia.

Average 1930-34	32
1935	31
1936	41
1937	36

Dutch East Indies takes about 40 per cent of the coffee trade. The competition from this market will be necessarily stiff on account of its proximity. British East Africa and India are on a par and get between them about 22 per cent of the trade. Imports from Abyssinia, Guatemala and Costa Rica appear to be increasing. The imports are mostly in raw beans. Imports of tinned coffee are only about 200 cwt., most of which comes from the United Kingdom. The wholesalers usually get into direct touch with firms abroad. Estimated imports of coffee from India are as under :—

Imports of coffee (in cwt.) from India.

1932.	4,757
1933.	5,245
1934.	4,477
1935.	6,694
1936.	8,969
1937.	2,632
1938.	6,246

Most of the Indian imports consist of top grades of "Plantation" coffee.

New Zealand.—New Zealand like Australia and United Kingdom is a tea drinking country. About 10 lb. of tea per head is consumed as against 0·3 lb. of coffee. Consumption of coffee seems to have increased by about 40 per cent in the 16 years, between 1920 and 1936. A quarter of the imports came from India. Indian exports to New Zealand rose from the quinquennial average of 387 cwt. before the 1914 War to an average of 1,133 cwt. for the 5 year period ending 1937-38, i.e., an increase of nearly 200 per cent. *Robusta* from Java accounts for nearly 50 per cent of the trade. The imports from India consist entirely of the better grades of *arabica* "Plantation". East Africa is said to be competing with India. Coffee is imported through brokers.

Ceylon.—The consumption of coffee is about 30,000 cwt. a year. The *per capita* consumption is 0·5 lb. per annum. The following table shows the net imports into Ceylon :—

Imports of coffee (in thousand cwt.) into Ceylon.

Annual average 1930-34	27
1935	32
1936	22
1937	31

About 99 per cent of the imports come from Java. Cheap *robusta* grown in Java seems to have ousted India from the market. Imports from India in the decade ending 1919-20 averaged about 13,400 cwt. They dropped perceptibly after 1919-20 and are now only about 200 cwt. a year. The possibilities of introducing Indian *robusta* as against *robusta* from Java deserve to be explored. Ceylon with its large Indian population should provide a good field for the cheaper Indian coffees.

British Malaya.—The Malaysians are said to be coffee drinkers and the Chinese are increasingly taking to coffee. *Robusta* from Java forms more than 90 per cent of the imports. During 1930-32 total imports averaged annually about 58,000 cwt. In 1933-35 the imports were 86,000 cwt. India does not export any coffee to British Malaya. The possibilities of marketing Indian coffees particularly *robusta* should be explored.

Mauritius.—The consumption is about 2,000 cwt., of which about 500 cwt. come from East Africa. Mocha is the most popular. Before the 1914 War, Mauritius used to take almost all her requirements of coffee from India. The Indian exports amounted to about 1,900 cwt. but afterward the imports dwindled to about 175 cwt. and from 1925 India has been out of the picture entirely.

Malta.—The annual *per capita* consumption is estimated at 10 lb. per head. The following shows the imports :—

Imports of coffee (in thousand cwt.) into Malta.

Average of 1930-34	14
1935	45
1936	5

The average imports amount to about 25,000 cwt. a year, about 80 per cent of which come from Brazil. Imports from Java are approximately 2,600 cwt. Cheaper types of Indian coffee might be pushed as against Java and Brazilian.

Bahrien Islands.—Indian exports mounted to an average of 11,429 cwt. in the quinquennium ending 1929-30. They dropped to 2,943 cwt. in the following quinquennium. In 1934-35 it was only 45 cwt. and in 1935-36, 116 cwt. Later India seems to be making headway. In 1936-37 her exports amounted to 1,066 cwt. and in 1937-38 to 3,053 cwt.

Persian Gulf.—Imports of coffee to the ports in Persian Gulf find their way to Iraq, Baghdad, Egypt and Palestine. The importers in these places are connoisseurs of coffee. The following are the imports from India in terms of plantation and cherry :—

Imports of coffee (in cwt.) from India.

Years July to June)	Plantation.	Cherry.	Total.
1931-32	1,996	6,567	8,563
1932-33	2,458	2,558	5,016
1933-34	1,181	1,720	2,901
1934-35	4,013	3,598	7,611
1935-36	2,106	2,353	4,459
1936-37	4,009	4,627	8,636
1937-38	5,417	10,270	15,687

The proportion of plantation to cherry in the course of the seven years given above has ranged from 23 per cent of the total in 1931-32 to 53 per cent in 1934-35. The average during the period is 40 per cent plantation and 60 per cent cherry. In 1936-37 plantation was 46 per cent of the total and in 1937-38 about 35 per cent.

India's position in these markets appears to be improving. The annual average imports in the quinquennium ending 1935-36 were 5,710 cwt. In 1936-37 they improved to 8,636 cwt. and in 1937-38 to 15,687 cwt., which is more than twice the annual average quantity imported in the 5 year period ending 1935-36. Mysore plantation "A", "B", "C" and "Mixed" are in demand. Assortment of cherry "B" and "C" has also a good market. "Basanally" without "Triage" is preferred. Iraq buys more than half the quantity that is imported through Persian Gulf ports.

(b) *Foreign countries*—(i) *United States of America.*—United States of America takes in more than half of the Brazilian exports, about 83 per cent of Colombian, 30 per cent of Jamaica, 16 per cent of East African and 6 per cent of Dutch East Indies. About 9 per cent of the re-exports from the United Kingdom go to United States of America. In the course of the last two and a half decades the import of coffee seems to have nearly doubled. From 7,657,000 cwt. in 1909-13 it rose to 14,565,000 cwt. in 1931-36 and was 15,320,000 cwt. in 1937. "Mild" coffees appear to be steadily making headway against "Brazilians". The Brazilian share of the imports dropped from 64 per cent in 1930 to 57 per cent in 1936 and 54 per cent in 1937. Imports from British East Africa jumped from 3,000 cwt. in 1927 to 135,000 cwt. in 1935, and 257,000 cwt. in 1936 and were 140,000 cwt. in 1937. It seems remarkable that Indian exports to United States of America are negligible. The big strides taken in the course of a few years by the East African coffees, which come under the "mild" category like Indian, show the great potentiality of this market. There are about 5,800 firms who do wholesale business in coffee. Of these, 1,100 roast their own coffee. The travelling salesman employed by the wholesaler acquaint the retailer with all the "talking" points of the particular coffee and put him in the way. New York Coffee Exchange started its operation as early as 1882. In 1920, New Orleans opened the Green Coffee Association of New Orleans Inc. and in 1918 San Francisco opened a Coffee Exchange. Approved types are listed in the Exchange. British East Africa is the largest supplier not listed in the

New York Coffee and Sugar Exchange and its coffee is largely taken by contractors for the army, navy and civilian concentration camps and charitable institutions. Beans shipped to United States of America should be carefully graded as to size. Brazilian and Kenyan grading are considered satisfactory. Variations in size between the contents of different bags are apt to hamper expansion of market for Indian coffee. It appears that one consignment of 500 bags of Empire coffee imported into United States of America had 87 different marks, each of which had to be tested by a taster. This makes business difficult in a country where standardised products are essential for the large multiple shops and chain stores.

New York imports about 6,500,000 cwt. of coffee supplying about 43 per cent of the country's demands. New Orleans comes next with 27 per cent of the imports into United States of America and San Francisco follows with 10 per cent. There are about 75 firms who do wholesale business in coffee in New York, 30 in San Francisco and 25 in New Orleans. As there is a demand for quality coffees as well as inferior types, it would be desirable to establish contact with the coffee trade in United States of America with the help of the newly appointed Indian Trade Commissioner. Most of the advertising is done by packers in respect of their own brands and a blend of Indian coffee would help to give these brands a splendid individual character with distinctive attractions.

The United States of America is the foremost importer of coffee. Nearly 50 per cent of the world imports are taken by the United States. The following figures of average annual consumption show the trend :—

Average annual consumption (in lb.) per head.

1870	6.0
1910-14	9.6
1915-19	10.9
1927-31	12.6
1932-36	12.8
1937	13.3

In the last sixty-seven years the consumption has more than doubled. A steady increase in *per capita* consumption shows the ever increasing popularity of the beverage in the United States.

It is said that the place coffee occupies to-day in America is, to a considerable extent, due to prohibition which was inaugurated in 1919. But statistics show that prohibition was only a contributory factor and that coffee forged its way to the forefront on its own merits. The increase in consumption during the period 1919-33 was about 1.5 lb. per head. The annual *per capita* consumption for the 5 year period ending 1919 increased by 1.3 lb. per head over the average for the quinquennium ending 1914. Even after prohibition was lifted there has been a steady increase in consumption, the increase being from 12.9 in 1930-33 to 13.2 in 1934-37.

The United States of America re-exports about 90,000 cwt. of coffee annually. Most of this goes to Europe. Germany comes in for the major share, average imports being about 25,000 cwt. from United States of America. France imports about 20,000 cwt. and Sweden about 13,600 cwt.

(ii) *Europe*.—France, Germany, Belgium, Sweden, Netherlands, Italy and Denmark are the largest buyers of coffee. Western Europe is more coffee minded than the other parts. The Mediterranean countries and the Balkans

come next. From the point of view of *per capita* consumption, Sweden, with an annual *per capita* consumption of 16·6 lb., topped the world countries in 1937 excepting Brazil. Denmark closely followed with 15·7 lb. Belgium came next with 12·9 lb. per head.

The increase in the consumption of coffee in Europe is not so pronounced as in the case of United States of America. Imports of coffee into Europe increased by about 7·5 per cent in the course of 15 years ending 1929, while they rose by 68 per cent in the same period in the United States of America. It may be observed that the population of United States of America is increasing faster than that of Europe. It went up by 27 per cent during the above period in the United States, while in Europe it rose by 6 per cent only. The *per capita* consumption in most of the countries is higher than that before the 1914-18 War as the following indicates :—

Per capita consumption (in lb.) of coffee in Europe.

	1913.	1937.
Sweden	13·41	16·60
Denmark	12·85	15·74
Belgium	12·27	12·94
France	6·41	9·75
Netherlands	8·80	9·72
Germany	5·43	5·78
Italy	1·79	1·94
Rumania	1·04	0·60*
Switzerland	6·48	7·29*
Greece	1·19	1·80*

The increase in consumption is more marked in France, Sweden and Denmark than in other countries. Belgium, Germany, Italy, Switzerland and Greece have not registered any appreciable increase. The consumption has declined in Rumania from 1·04 lb. to 0·60 lb. per head. Hamburg, Bremen, Copenhagen, Amsterdam, Rotterdam, Antwerp, Havre, Bordeaux and Marseilles are the chief continental ports that import coffee.

Indian coffee is not sold “straight” as Indian coffee to the retailers on the Continent. It is used for blending with other coffees especially Central and South Americans, like Colombia, Guatemala and Venezuela, to give the necessary flavour to the latter. Tastes of the Continental countries differ widely. What the French would put down as first class coffee would not find favour in Germany or Sweden. Therefore, blends vary in different countries and its use for blending purposes is the determining factor in the demand for Indian coffee on the Continent.

France.—France stands at the top of the coffee importers in Europe and is one of the biggest consumers of Indian coffee. The annual consumption is about 3,700,000 cwt. It rose from 2,200,000 cwt. in 1909-13 to 3,680,000 cwt. in 1932-36, while imports from India declined from 98,485 cwt. in

1909-13 to 56,400 cwt. in 1932-36. The following table indicates the position as regards imports into France :—

Imports of coffee (in thousand cwt.) into France.

—	1931.	1932.	1933.	1934.	1935.	1936.	1937.
India	49	53	46	51	32	100	44
East Africa	36	78	50	63	44	52	70
Brazil	2,410	1,910	1,980	1,430	1,790	1,700	1,600
Haiti	248	249	483	424	298	256	128
Dutch Indies	245	394	318	424	433	329	281
Venezuela	193	234	111	123	171	192	180
Madagascar	161	*	282	247	217	390	496
French West Africa	132	253	*	*	82	113	167
Others	346	509	600	708	643	538	684
Total	3,820	3,680	3,870	3,470	3,710	3,670	3,650

In 1937 the *per capita* consumption was about 9·75 lb. Average imports from Brazil amount to 49·5 per cent of the total. The imports from French Colonies are steadily increasing ostensibly due to preferential treatment. Imports from Madagascar have more than tripled in the course of the last seven years and those from French West Africa have increased slightly. The share of India is only 1·4 per cent of the total.

Imports of coffee come under French import quota system. The quotas are fixed periodically and are subject to licence. Quotas have not hindered India's trade as they are normally in excess of India's share of the imports. The allotments in force in the second quarter of 1938 were as under :—

	(Cwt.)
Brazil	590,400
Venezuela	41,328
Ecuador	34,440
San Domingo	34,440
Angola	17,712
Peru	7,380
Dutch Indies	1,03,320
San Salvador	9,840
Haiti	<i>Nil</i>
Other countries	84,034
Total	922,894

Imports from India in the above mentioned period were 19,167 cwt.

The public at large drink low priced Brazilian and *robusta* coffees from the French Colonies. Indian coffees are considered excellent but they cater for a special limited market. About 75 per cent of the Indian exports to France

are "Cherry" coffee. The following table gives the approximate quantities of 'Plantation' and cherry, imported into France from India for years ending 30th June.

Imports of coffee (in cwt.) from India.

	Plantation.	Cherry.
1931-32	12,251	32,326
1932-33	11,863	45,643
1933-34	9,396	54,737
1934-35	12,164	39,343
1935-36	25,187	52,563
1936-37	9,361	38,483
1937-38	10,795	30,828

Havre and Marseilles are the chief importing ports. The shipments are heaviest in March, April, May and June. The top grades of Indian "Plantation" do not appear to find much favour in France. There is a small demand for "Plantation", "B", "C" and "Triage". A special market for Nilgiris and Salem coffees is a pronounced feature and a higher price is paid for Salem plantation than for Mysore and Coorg, while Nilgiris obtains a premium over Salem. It is alleged that in certain cases by arrangement with the buyers in France, Mysore coffees are shipped as "Salem" and "Nilgiris" to satisfy customers who are used to these trade descriptions.

There is a good demand for what is called "Basanally". "Basanally" is now an export standard for cherry from which 30 per cent of the large flats and Peaberry have been removed. Only better qualities of cherry coffees are generally shipped to France. "Malabar Native first" and "second" are inferior to "Basanally" as they have a higher percentage of "Triage". They are usually shipped in February, March and April. "Basanally" is considered high class coffee compared with the bulk coffee from Brazil and Netherlands and is usually in demand for high class blends. Plantation coffee shipped from India to France is of a lower standard than the quality in demand in the London market. The French buyers go into the market in July and August for forward shipment for the following January.

Extensive propaganda is carried on for Brazilian coffee in France. Brazilian coffee is exclusively sold in some subsidised special cafés. Bars have been opened in large towns serving coffee of one origin only. Special representatives are sent by the producing countries for establishing contact with the importers and extending business relations. Havre is the most important coffee market in France. Business is conducted on an exchange similar to London Stock Exchange with jobbers quoting prices.

Germany.—Next to France, Germany is the biggest importer of coffee on the Continent. The average imports in 1909-13 amounted to 3,569,000 cwt. The War of 1914-18 saw a set-back. The Germans took to substitutes as a matter of necessity due to the blockade. Imports after the War dropped in 1921-25 by about 64 per cent, the average being 1,280,000 cwt. However, the imports later rose to the pre-War figures. The average imports for 1930-34 were 2,841,000 cwt., and in 1937 and 1938 the imports were 3,500,000 and 3,886,000 cwt. respectively.

The *per capita* consumption before the 1914 War was 5·4 lb. and 5·1 lb. in 1936 and 5·78 lb. in 1937. The following are the chief sources :—

Imports of coffee (in thousand cwt.) into Germany.

—	1932.	1933.	1934.	1935.	1936.	1937.	1938.
Brazil	1,173	963	1,315	1,339	1,332	..	..
Guatemala	446	440	448	234	226	..	..
Salvador	208	260	285	194	154	..	..
Costa Rica	126	132	148	121	114	..	..
Venezuela	121	133	116	150	246	..	..
Colombia	123	191	270	431	729	..	..
British East Africa	29	43	31	20	48	..	..
India	16	13	16	6	10	..	..
Others	323	382	338	410	198	..	..
Total	2,565	2,557	2,967	2,905	3,057	3,500*	3,886*

The Brazilian share of the imports amounts to about 43 per cent of the total. The demand for "Milds" is therefore considerable being about 57 per cent. Colombia is coming into prominence. India's share of the total imports is gradually going down. In 1937 India exported only 4,000 cwt. and in 1938 the exports went down to 2,737 cwt. In 1939 (up to July) 203 cwt. only were despatched. It would seem that the German market has been practically lost to India. "Plantation" coffee formed about 90 per cent, cherry 5 per cent and "monsooned" coffee 5 per cent of the Indian exports to Germany. The types and grades under plantation most in demand were the top grades ("A" and "B") of Mysore, Coorg and Nilgiri coffee. Hamburg is one of the biggest coffee markets in Europe carrying larger stocks than even Havre. Coffee is valued on size, colour and cup quality.

The systematic propaganda carried on by Brazil and Colombia is a feature of the German market. It is evident from the above statistics that propaganda has helped to push up the imports of Colombia in recent years. Besides Brazil and Colombia, almost all the South and Central American coffee producing countries have trade agreements. Large German houses in the exporting countries in Central America transact business with the home country. In February 1939, it is understood that an agreement was reached between German commercial interests operating in the country and the Bank National in Costa Rica whereby the Bank authorised an additional amount of money for use in exporting coffee and cocoa to Germany.

Brazil introduced the bonus system whereby importers of Brazilian coffee received an additional 10 per cent on every 125 bags on order. The sum of Rm 40 millions or Rs. 5,46,000 advanced by the Bank of Brazil for the coffee trade was, however, frozen in Germany.

Norway.—The *per capita* consumption in Norway is as high as 10·57 lb. Before the 1914 War the average consumption of coffee in Norway was only about 264,000 cwt. In the lustrum ending 1935 it increased to 338,000 cwt.

*Details are not available.

It is understood that the "mild" coffees from Central America formed about 30 per cent of the imports and the Brazilian amounted to about 15 per cent. British East Africa held about 5 per cent of the imports. The figures of imports for 1937 show that Salvador supplied the largest quantity. The imports from some of the more important countries were as under :—

Imports of coffee (in thousand cwt.) into Norway in 1937.

Salvador	103
Brazil	48
Dutch E. Indies	43
Dutch Guinea	40
India	24

India's share is only about 2 per cent but imports of Indian coffee into Norway are increasing as the following shows :—

Imports of Indian Coffee (in cwt.) into Norway.

Average 1926-30	12,000
" 1930-35	16,000
1936	31,000
1937	24,000
1938	22,501

From 12,000 cwt. in the 5 year period 1926-30, the imports rose to an annual average of about 22,000 cwt. in the quinquennium ending 1938—an increase of more than 83 per cent. India has a highly potential market in Norway and the ground gained needs to be followed up.

Among the "mild" coffees from Salvador, Java, Mocha and Kenya besides India are popular. Coffee essence is not in demand and tablet coffees are unknown. There is also no demand for blended brands. The exports of "Plantation" coffee from India to Norway are only about 12 per cent of the total. The demand for this is confined mostly to Mysore plantation. About 80 per cent of the demand is for "Monsooned" coffee and the shipments are heaviest in September, October and November. "Monsooned Mysore Native AA" shipped as "Malabar Native AA" is in good demand. This does not contain "B" or "C". Allowance is made for about 2 per cent "Triage". "Monsooned", "Basanally" and Mysore plantation "A" and "B" are also shipped. Faded coffees have a market in Norway. The number of coffee brokers or agents has considerably increased. Where there were only 12 agents there are 34 now and competition to get more business is very keen. There is some demand for *liberica* as well. The Norwegian importers buy mainly on appearance rather than liquoring quality. The name Malabar coffee is not known to the consumer as it is bought under the name of Java or Mocha blend. The "monsooned" coffees from India are first roasted and then blended as it is considered unsatisfactory to mix the raw beans before roasting. Some of the best blends consist of 50 per cent Malabar, 25 per cent Salvador and 25 per cent Mocha. In Oslo a considerable number of retailers roast and blend their own coffee.

It has been observed that of late a considerable quantity of "Monsooned" coffee arrives early in October with the result that the coffee is not completely monsooned. In previous years they usually arrived in November/December. Shipments of artificially monsooned coffee in March, April and May are also undermining the prestige of "Monsooned Malabar Native AA". The trade feel that good quality Malabar could replace Mocha, the quality of which is said to be deteriorating.

Malabar is now sold in districts between Oslo and Bergen where previously Malabar had no market. In Bergen, unlike Oslo, the importers distribute coffee roasted and blended to retailers who do not know the composition of the blends.

Sweden.—Sweden is at the very top with 16.6 lb. consumption of coffee per head. From 663,000 cwt. before the 1914 War her offtake increased to 808,000 cwt. in 1925-29, 890,000 cwt. in 1930-34 and in the 4 year period ending 1938 it averaged 960,000 cwt. In 1938, her consumption stood at 1,037,000 cwt.

Coffee is either imported in bulk from the producing centres or bought in Amsterdam, Hamburg or London by Swedish wholesalers.

It is unfortunate that direct Indian exports to Sweden are so small. The following figures show the imports of coffee from different countries in 1936 :—

Imports of coffee (in cwt.) from different countries into Sweden in 1936.

French West Africa	512
British East Africa	2,567
Rest of Africa	16,331
Arabia	2,758
British India	1,340
Dutch India	32,170
Mexico	4,767
Guatemala	73,048
Solovador	67,670
Nicaragua	1,793
Costa Rica	12,785
West Indian Islands	7,289
Venezuela	17,829
Brazil	628,568
Colombia	45,921
Rest of South America	1,990
Australia	1,162
Total	918,500

Out of about 918,500 cwt. more than 68 per cent was imported from Brazil. The direct exports from India to Sweden according to the Sea-borne Trade Returns of India are negligible, being only 222 cwt. in 1935-36. The takings from Central America are about 20,000 cwt. But according to Swedish official statistics as given above, Indian imports amounted to about 1,340 cwt. in 1936. These are ostensibly re-exports from United Kingdom, Hamburg, Denmark, Germany, Holland and Belgium. It is understood that this small quantity is consumed in the South of Sweden. Imports from British East Africa are steadily going up. From about 140 cwt. in 1931 they rose to 2,567 cwt. in 1936. The following is the approximate consumption of coffee in Sweden :—

Estimated consumption of coffee (in thousand cwt.) in Sweden.

1930	880
1931	1,035
1932	756
1933	887
1934	893
1935	953
1936	919
1937	931
1938	1,037 (provisional.)

The average consumption in the quinquennium ending 1937 is 923,000 cwt. annually.

Of the Brazilian group, "Santos" is preferred and the Swedish market is increasingly taking to "Santos" which is sold "straight", without being blended. There is a limited demand for coffee from Dutch East Indies which is kept in storage for two years. The appearance of this coffee is dark green and not whitish as "Monsooned" coffees from India. Guatemala, Salvador, and Colombia have also a good market. Coffee is sold unmixed with chicory. The importers judge the shipment on appearance and cup test. There are no coffee exchanges and the retailers buy the stock from importers. The merchants prefer a large bean to small and in view of the fairly high demand for "Mild" coffees, India can explore the possibilities. A cinnamon roast is apparently preferred to the darker Continental roast and this is possibly one of the reasons why "Malabar" which requires a fairly high degree of roast is not popular. However, further attempts should be made to tackle the market as India can offer both quality and price coffees.

Netherlands.—Netherlands, the seat of one of the biggest re-exporting centres of coffee with a large production from her colonies in the Far East, has played an important part in the evolution of coffee drinking in Europe. The *per capita* consumption in 1937 was 9·7 lb. per head. The table below shows the imports of coffee into Netherlands:—

Imports of coffee (in thousand cwt.) into Netherlands.

Pre-War average	2,532
1925-29	1,161
1930-34	931
1935	725
1936	636
1937	757
1938	894

Netherlands is gradually losing its place as one of the foremost transshipping centres of coffee on the Continent and the smaller imports are due to this fact. Nearly 50 per cent of the imports come from Brazil, about 42 per cent from Netherlands East Indies and about 5 per cent from Colombia. Imports from India are gradually going down. From 15,000 cwt. in the quinquennium ending 1930 it dropped to about 9,000 cwt. in 1931-35, 5,872 cwt. in 1936 and 1,024 cwt. in 1937. In 1938 it was 2,463 cwt. As India is establishing direct contacts with the different European countries, Netherlands does not serve as a transshipping station so much as before for Indian coffee.

Nearly 80 per cent of the imports into Netherlands pass through Amsterdam. Rotterdam is the next important coffee market. A good speculative trade for supplying coffee to Germany and Italy is being carried on in both these markets. Dutch packers blend Brazilian coffee with Central American or Java. Nilgiri plantation coffee usually fetches a premium of 5 *sh.* over Coorg. Coorg plantation "O" is popular and is preferred to Mysore. The practice of marking Mysore as Coorg is not uncommon. There is a small demand for "Monsooned Malabar Native AA" which is usually re-exported to Norway. Though the use of chicory originated in Holland it is very limited in extent. Business is carried on through agents or brokers who are said to enter often into collusion with buyers to the detriment of the Indian exporters. Exporters in India therefore are compelled to apply to London for arbitration. It is believed that an intelligent and discriminate use of brokers would serve to increase the Indian coffee trade.

Belgium.—The *per capita* consumption in 1937 was 12·9 lb. Coffee imports into Belgium have remained fairly steady. Before the 1914 War it was 995,000 cwt. In 1925-29 it dropped to 784,000 cwt., but it again rose to 973,000 cwt. in 1930-34. The following are the figures for the later years :—

Imports of coffee (thousand cwt.) into Belgium.

	Total imports.	Imports from India.
1935	963	10
1936	1,031	22
1937	1,006	8
1938	965	7·5

Nearly 30 per cent of the imports are from Brazil. The Colonies and Holland with 160,000 cwt. a year take the second place. Re-exports from Holland and France are considerable. Most of the re-exports from Holland consist of Java, which form the basis of the most popular blends. Imports from Belgian Congo are said to be increasing. Indian imports are scarcely 1 per cent of the total. The heavy shipments in 1936 from India appear to have adversely affected the imports of Indian coffee in 1937 and 1938. But in 1939, 9,461 cwt. have been exported to Belgium by July, which indicate that India's position in the Belgium market has not suffered. Nearly 50 per cent of the average exports are plantation and the remainder is cherry coffee, of which about 30 per cent is "Monsooned". Mysore plantation top grades and "Basanally" have a good market.

Denmark.—Denmark with a *per capita* consumption of 15·74 lb. is second only to Sweden. Imports of coffee rose after the 1914 War as the following table indicates :—

Imports of coffee (thousand cwt.) into Denmark.

Pre-War average	285
1926-30	511
1930-34	531
1935	495
1936	533
1937	527
1938	530

The annual average during the last 5 years was about 520,000 cwt. Indian imports into Denmark have gone up by more than 90 per cent since the last War. More than 35 per cent of the imports come from Brazil, about 25 per cent from Central America and Venezuela. Java follows with about 12 per cent of the trade. Re-exports from Holland amount to another 20 per cent. Indian imports are negligible. In the quinquennium ending 1934-35 it was only about 800 cwt. and in 1937-38 it was only 304 cwt. The demand is mostly for Mysore plantation top grades.

There are no coffee exchanges or auctions. Owing to the Government policy importers are obliged to buy only cheaper qualities and pay little attention to the quality factors, such as size, colour, weight or quality in the cup. Venezuela, Java and Colombia coffees are popular. Costa Rica is considered too expensive. The possibilities of putting in cheaper Indian coffees deserve to be explored. It must be remembered that 65 per cent of the total

takings are "milds". Coffee essence and tablets are not taken. Intensive propaganda is understood to be carried on by the Brazilian Government. Special restaurants are being run in the busiest quarters of Copenhagen for selling Brazilian coffee exclusively.

Italy.—The Italian consumption of coffee considerably increased after the 1914 War, but later there has been a slow falling off in demand. The pre-War (1914) average was about 520,000 cwt. The average for 1925-29 and 1930-34 was 890,000 and 821,000 cwt. respectively. The following table indicates the position in subsequent years :—

Imports of coffee (in cwt.) into Italy.

	Total imports.	Imports from India.
1935	795,000	8,600
1936	626,000	1,100
1937	743,000	1,600
1938	748,000	1,000

The annual average for the 5 year period ending 1938 was only 727,000 cwt. The average *per capita* consumption in 1930-34 was 2.19 lb., while in 1936 it was 1.65 lb. and in 1937, 1.94. Indian imports have also considerably fallen from 1936. India was building up her coffee trade with Italy when the sanctions against Italy came into force in 1936. The exports dwindled from 8,593 cwt. in 1935 to 1,104 cwt. in 1936. Italy is since reported to be taking increasingly to Abyssinian coffee but the market for higher quality coffees from India might be developed again.

Yugoslavia.—The following are the imports of coffee into Yugoslavia from 1934 to 1936 :—

Imports of coffee (in cwt.) into Yugoslavia.

	1934.	1935.	1936.
Brazil	100,660	97,180	122,520
United Kingdom	4,500	9,800	3,600
Germany	1,960	1,100	3,300
Kenya	320	2,600	700
British India	450	700	500
Colombia	100	<i>Nil</i>	700
United States of America	1,110	4,100	900
Others	5,377	14,008	4,641
Total	114,477	129,488	136,861

Brazil practically enjoys a monopoly. More than 84 per cent of the imports are from Brazil. India's share of the imports is only 0.4 per cent. A small quantity is re-exported to Albania.

Size, colour, weight and flavour are understood to be the basis of valuation. The grades most commonly used are "Rio" Nos. 5, 3 and 2, Santos and Bahia.

Coffee is imported by wholesalers who retail it to small dealers. There is no coffee exchange and there are no coffee auctions. The consumers usually

buy raw coffee and roast and grind it themselves. Cheap coffee substitutes like roasted barley are in use. Essences and tablets are not used.

Portugal.—The *per capita* consumption is only about 1.75 lb. Imports of coffee are as under :—

Imports of coffee (in cwt.) into Portugal.

—	1933.	1934.	1935.	1936.
Portuguese Colonies	78,260	98,360	91,840	1,01,740
Brazil	33,000	31,320	37,920	28,800
Other countries	1,620	..	140	260
Total	112,880	129,680	129,900	130,800

About 80 per cent of the imports from Portuguese Colonies came from Angola. Brazil coffees are liked for their cheapness. There is a small demand for Mocha.

There are no quotas. Most of the transactions are done through brokers. Most retailers make their own blends which are either packed in tins or sold loose.

Greece.—Imports are as follows :—

—	1932.	1933.	1934.	1935.	1936.
	(In cwt.)	(In cwt.)	(In cwt.)	(In cwt.)	(In cwt.)
Abyssinia	20,502	14,044	613	878	608
Egypt	2,636	851	181	59	1
Brazil	13,220	31,987	95,538	112,471	137,744
France	22,724	8,938	106	113	176
Italy	6,991	5,711	954	656	..
Holland	8,749	10,884	3,508	140	113
Dutch Indies	7,132	15,295	7,028	994	345
Other countries	494	1,492	11	307	546
Total	83,448	89,202	107,939	115,618	139,533

Brazilian imports are increasing from year to year. In 1936 they were about 98 per cent of the total. Brazilian bold bean is said to be the most popular type. Colombia and Venezuela coffees are imported through trade clearing arrangements. Limited quantities of *robusta* are also imported. Brazil carried on a big propaganda campaign by advertising in restaurant cars on railways and in local press. Coffee is imported in bulk in bags of 60 kilograms through import agents, largely through London and Hamburg brokers. The London press and the brokers' quotations form the basis for the transactions.

Switzerland.—The average *per capita* consumption is about 7.29 lb. per year. About 219,000 cwt., were annually imported before the War. It has now increased to 300,000 cwt. The following table gives the imports :—

Imports of coffee (in cwt.) into Switzerland.

—	1931.	1932.	1933.	1934.	1935.	1936.
West Africa .	3,464	6,406	1,966	3,861	6,900	7,262
British East Africa .	6,154	7,081	3,707	5,935	10,600	11,460
British India .	10,653	12,853	9,387	8,872	10,287	16,761
Mexico .	3,971	6,736	2,926	4,920	7,526	6,546
Netherlands Indies .	5,111	24,950	4,658	6,794	8,165	6,996
Central America	58,694	81,150	46,205	46,614	74,257	..
Haiti .	8,106	10,165	7,255	9,923	11,636	16,193
Colombia .	9,826	34,082	21,543	18,200	23,476	16,492
Venezuela .	2,671	8,403	1,572	2,393	3,100	1,162
Brazil .	186,755	189,365	123,189	154,858	197,268	156,934
Ecuador .	338	846	539	1,065	1,240	1,183
Others .	9,023	12,180	8,846	11,353	12,339	57,081
Total .	304,766	394,217	231,793	274,788	366,814	298,010

The high imports in 1932 were due to the large purchases made before the proposed increase in customs duties. More than 50 per cent of the imports are from Brazil. British East Africa is making headway.

According to the trade returns of British India, Indian exports to Switzerland for the last 3 or 4 years are nil. But the above statistics from Switzerland show that Indian imports are increasing and amounted to about 16,761 cwt. in 1936. Most of the Indian coffee finds its way into Switzerland through Antwerp.

There are no coffee exchanges or auctions. Agents of exporters in the sea ports send market reports. Brazil does a lot of advertising by posters. Coffee is usually sold through wholesale importers and agents. They mostly deal directly with exporters in producing countries or else with agents or brokers at distributing centres like Antwerp, Havre, etc. Large importers purchase about 10 tons at a time.

Coffee is known as “ natural ” and “ grage ”. “ Natural ” is unwashed coffee and “ grage ” is washed, polished and coloured coffee. Brazilian Santos seems to be the most popular due to the low price. In French Switzerland, Santos soft is preferred while in some other cantons (districts) “ Rio ” which has a sharper tang is favoured. Washed coffees are in demand in German speaking cantons. *Robusta* enjoys a certain popularity but is only bought when its price is lower than Santos. Salvador seems to be also in favour. Mysore coffee though more costly is appreciated by connoisseurs and is used for blending. The demand for “ monsooned ” and cherry “ Peaberry ”

from Mysore and Coorg appears to be good. Cherry "Peaberry" is called "Malabar pearls". Consumers usually buy their coffee roasted and ground in their presence.

Turkey.—Brazil holds the monopoly at the exporting end and a semi-government concern (*viz.*, Brezilya Kahvesi Turk Anonim Serkati), appears to hold the monopoly for importing coffee into Turkey.

Austria.—The following were the imports into Austria in 1936 :—

	(Cwt.)
British India	4,023
Dutch East Indies	849
Abyssinia	461
British East Africa	223
South Africa	540
Costa Rica	5,943
Guatemala	15,872
Haiti	134
Mexico	979
Brazil	59,455
Colombia	4,387
Ecuador	99
Peru	81
Venezuela	280
Various countries	3,816
Nicaragua	1,970
Salvador	3,142
Total	102,254

Arabica forms 90 per cent of the imports. About 10 per cent is *robusta*. More than 58 per cent of the total imports were from Brazil. Only about 4 per cent of the imports were from India. Mysore and Coorg are said to be popular. Liquoring is the most important test in valuing coffee.

Finland.—The annual consumption is about 320,000 cwt. or 9·89 lb. per head. 70 per cent of the imports are from Brazil. Re-exports from Germany amount to 20 per cent. Cheaper grades of Empire coffee are not popular as the beans are considered to be too small. The Indian beans being large should make an appeal in this market. Colombia is said to be doing strong propaganda for her coffee.

Poland.—Poland took about 130,000 cwt. of coffee annually, about 73 per cent of which came from Brazil. In 1936 the following were the imports of coffee :—

Imports of coffee (in cwt.) into Poland.

Brazil	90,347
British India	1,317
Colombia	2,676
Denmark	12,352
Costa Rica	2,433
Tanganyika	8,618
Other countries	5,673
Total	123,421

Enquiries showed that the "mild" coffees imported consisted mostly of "Plantation" coffee. Scarcely 1 per cent of the imports consisted of "Cherry" coffee and hardly any *robusta*. Imports from India were negligible. In this area there is a definite preference for the large-sized heavy beans. Inferior types like "Rio" No. 6 are bought on description while importers conduct liquoring tests for better grades of "Plantation" coffee. Though the Seaborne Trade Returns of India have not shown any exports of Indian coffee to Poland, about 1,300 cwt. were imported as re-exports from other countries in 1936.

(iii) *Asia—Japan*.—Brazilian, Java and Central American coffees are well established and the Japanese are said to prefer Brazilian coffee as it helps their nationals who are employed in coffee plantations in Brazil. Almost all the Japanese emigrants who started going to Brazil in large numbers in 1906 settled on coffee plantations. The State of Sao Paulo made special efforts by shipping 400 bags of coffee every year free of charge.

The following were the imports from the various countries in 1935 :—

Imports of coffee (in cwt.) into Japan.

The Straits Settlements	26
British India	23
Arabia	7,757
Aden	235
Netherlands East Indies	28,958
Great Britain	56
Germany	10
United States of America	1,137
Mexico	18
Guatemala	2,411
Salvador	149
Nicaragua	157
Costa Rica	131
Peru	140
Argentina	52
Brazil	20,207
Colombia	1,048
French Somali Coast	1,443
Kenya, Uganda and Tanganyika	1,038
Federation of South Africa	18
British East Africa	1,117
New Caledonia	3
Hawaii	768
Bonded manufacturing warehouses	608
Total	67,510

Brazil and Java between them practically monopolise the trade. Inasmuch as British East Africa is able to market about 1,117 cwt., India also should be able to sell some of her cheaper coffees.

F.—Burma.

The annual *per capita* consumption of coffee in Burma is only 0·085 lb. The majority of the people take tea and it is only in the urban areas that there is a demand for coffee. Out of a total consumption of about 11,000 cwt., about 61 per cent of the demand is for freshly ground coffee, about 36 per cent for ground coffee packed in tins and about 3 per cent for raw beans. The demand for roasted beans is negligible. Most of the demand for raw beans comes from South Indian residents in Burma.

The consumption of coffee appears to be gradually increasing in Burma. In 1932 the consumption was about 9,000 cwt. while in 1938 it was estimated at about 11,400 cwt. About 3,600 cwt. of raw beans consisting mostly of Nilgiri and Shevaroy's assortment are imported from India. They are used by the manufacturers for preparing tinned coffee. One or two firms import about 25 per cent of roasted beans from India. They are sold in ground form.

Detailed information regarding the nature of the demand for ground coffee^e in tins was collected for the period 1930-35. The demand is analysed as^s under :—

	"Pure" coffee, (cwt.)	"French" coffee, (cwt.)	Total, (cwt.)
1932	910	1,600	2,510
1933	835	2,200	3,035
1934	750	2,300	3,050
1935	620	2,500	3,120

The consumer's preference for "French" coffee is evident from the demand which seems to be increasing. The comparative cheapness of "French" coffee and the idea that it gives better flavour and body in the cup on account of the admixture of chicory are the main reasons for its increased consumption. Tablets and "French" coffee with a high percentage of chicory are much in demand in the small coffee shops and among the labourers. Consequent on the increase in demand for "French" coffee the consumption of "Pure" coffee in tins is going down.

The quality of freshly ground coffee available in the market does not seem to be of a high standard. Freshly ground coffee is prepared mostly out of the coffee produced in Burma. It appears from examination also that gram is sometimes mixed with the ground coffee sold in loose form.

Demand.]

INTER-CHAPTER TWO.

The absence of accurate statistics of production makes it difficult to gauge the extent of the internal demand. About 96 per cent of the coffee available for consumption in India is consumed within Madras, Coorg, Mysore, Travancore and Cochin, the rest of the country consuming only about 4 per cent.

The demand has risen from 5 cups per head per annum in 1932-33 to 7 cups in 1936-37. The *per capita* consumption in the non-producing areas is about 0.006 lb. and in the producing areas about 0.7 lb. If the rate of consumption could be increased by even 0.15 lb. per head, the entire coffee produced in India could be easily absorbed in this country.

India's neighbour, Ceylon, and the poorest consuming areas in Europe, like Hungary and Rumania, take about four times the quantity that is consumed per head in India. In United Kingdom, the consumption per head is five times more than in India. It is a point of considerable significance to the coffee industry that, in spite of the fact that she produces some of the best quality coffees of the world, India's consumption ranks so low as compared with other countries. The Indian Coffee Cess Committee constituted by the Government of India in 1935 has, however, made a beginning with market propaganda to tap the potential internal demand.

In the non-producing areas, coffee is practically an unknown drink to the general population, and milk and butter-milk hold the field. Recently, tea has made rapid strides and it may be safely asserted that coffee has an equally good future in these areas. As a rule, countries which consume more milk drink more coffee, but in India areas which consume relatively less milk drink more coffee. As coffee requires a generous admixture of milk, the cheapness and abundance of milk supply should contribute to an increase in demand for coffee. Sind, North-West Frontier Province, Punjab and Delhi, therefore, appear to be good potential markets for coffee.

On an average, about 340,000 cwt. of *arabica* as against 50,000 to 60,000 cwt. of *robusta* are consumed every year. The demand for *arabica* comes mostly from the producing areas. *Robusta* is not exported and, therefore, almost the entire crop is absorbed in India. It should be grown more

extensively to meet internal demand for a cheap coffee, but its export should be discouraged—except perhaps to Ceylon.

About 60,000 cwt. are polished every season of which about 40,000 cwt. are colour polished. More than half of the *robusta* crop and a fair quantity of *arabica* cherry are polished. More than 75 per cent of *robusta* is also coloured. This practice is not in the interest either of the producer or the consumer.

About 90 per cent of the coffee consumed in India is sold in raw form, 6 per cent in freshly ground form, and about 4 per cent in tins including tablets. The sale of roasted beans is almost negligible.

While more than 97 per cent of the raw beans and 92 per cent of freshly ground coffee are consumed in the producing areas, only about 58 per cent of tinned coffee finds its way into these markets. In the non-producing areas, only about 36 per cent of the total coffee sold is in raw form. About 47 per cent is sold as tinned coffee and about 13 per cent as freshly ground coffee.

In the producing areas, families buy raw coffee as the technique of roasting and grinding is well known to them. In the North, consumers have no knowledge of roasting and grinding and therefore they prefer to buy either tinned coffee or coffee freshly roasted and ground for them in the shops at the time of purchase. In the Madras Presidency, Mysore and Bombay, the demand for freshly ground coffee is increasing with the increase in the number of mechanical appliances for roasting and grinding coffee on a commercial scale.

The habit of drinking coffee in a café is apparently strong among the urban population in the Madras Presidency where there are about 14,000 coffee shops which are responsible for more than a quarter of the total local consumption of raw beans.

Coffee with *gur* or palmyra sugar should be a cheap proposition for the labourers and the agriculturists as *gur* is considerably cheaper than sugar. The possibilities of serving cheap coffee to mill-hands and to the villagers deserve to be explored.

In the Punjab, tea is slowly making headway but coffee has not touched even a fringe of the population. In 1937-38 the *per capita* consumption of coffee in the Punjab worked out

at 0.003 lb. per annum. About 53 per cent of the total requirements were for ground coffee in tins.

In the United Provinces, the consumption per head is lower than that in the Punjab. In Bengal the position is slightly better than in the United Provinces. In Madras city, the bulk of the demand is for Plantation "A" and "Peaberry". But since 1936 the demand for cherry (Native) "Peaberry" is increasing as the inexperienced consumer is attracted by the bright colour of polished and coloured coffee.

A comparison of figures of consumption for 1933-34 and 1937-38 shows that, with the exception of Bombay, the U. P. and the Punjab (including North-West Frontier Province and Delhi), all other areas show an appreciable increase in consumption and the upper classes in the urban areas in Northern India are slowly taking to coffee. Well directed propaganda should speed up this process.

In the Madras Presidency and Mysore State, the habit of coffee drinking is spreading from urban to rural parts, and from the upper to the middle classes. Prohibition, where introduced, has apparently given a good fillip to coffee drinking.

Imports of foreign tinned coffee are only about 500 cwt. a year but they seem to be on the increase. From 250 cwt. in 1933-34 they have risen to 550 cwt. in 1937-38. The selling price of foreign coffee approximates to that of Indian tinned coffee and the increase in demand appears to be due to the fact that foreign packed coffees have better appearance, are generally well packed in inert gas, are not so finely ground as Indian tinned coffee and rank high from the point of view of liquoring quality. With plenty of excellent Indian coffees available for local manufacturers it seems surprising that there should be any imports of ground coffee.

While the United Kingdom imports only quality coffees from India, the Continental countries mostly take "Cherry" and "Monsooned" coffee. Besides being the premier market for the quality coffees of the world, London is an important re-export market although her re-export trade is slowly deteriorating. The trade restrictions on the Continent and the direct contacts made by the exporting countries are, to a considerable extent, responsible for the shrinkage in the re-export trade of London. London importers and merchant bankers finance the coffee exports to Europe and also help the planters with both fixed capital and working expenses, of which East Africa seems to have taken full advantage. Further,

London is the centre of arbitration between South America and Europe.

The Ottawa Preference came into force in 1933 and while the share of imports from India rose from 7·5 per cent in the quinquennium ending 1933 to 9·7 per cent in the following quinquennium, the share of Empire countries rose from 43 per cent to about 47 per cent in the same period and East Africa's share fell from 38 per cent to 35·9 per cent.

The financial backing given to the planters and coffee trade of Costa Rica and Kenya by the United Kingdom, the particular care taken by these two countries in despatching the top grades to United Kingdom, the close contact which Kenya had been able to establish between the trade in London and Kenya by having representatives of London trade in Nairobi, and the concentrated propaganda carried on by Kenya in the United Kingdom are some of the reasons for the large share taken by East African and Costa Rica coffees.

The pre-War (1914) average consumption of coffee in the United Kingdom was 253,000 cwt. It rose to 316,000 cwt. in the quinquennium ending 1929. An instructional campaign accompanied by practical demonstration of the best methods of preparing coffee in the cup should help to increase the consumption of coffee in the United Kingdom.

Canada tops the Empire countries in the consumption of coffee. Imports from British East Africa amounted to 85,000 cwt. in 1935, 105,000 cwt. in 1936 and 120,000 cwt. in 1937. Direct exports from India to Canada are at present negligible. This seems to show a lack of enterprise as compared with East Africa. Improvements in roasting, grinding and brewing as also the increasingly large number of U. S. A. tourists visiting the country are said to be responsible for the increased consumption of coffee in Canada. As a partiality for the large sized beans seems to be one of the features of the Canadian market, Indian coffee should be able to make headway against the smaller beans from elsewhere.

Colonial preference has increased the imports from East Africa into South Africa. It amounted to 83,000 cwt. in 1935, 116,000 cwt. in 1936 and 110,000 cwt. in 1937. Indian exports are now next to nothing being only about 300 cwt. of cherry-dried coffee. Most of the shipments go through commission agents who book orders on samples. India should be able to find a larger market in the Union if only on account of the Indian population in South Africa.

In Australia, tea is the most popular drink as in the United Kingdom. The *per capita* consumption of coffee in 1937 was 0.59 lb. while that of tea was 7 lb. Dutch East Indies takes about 40 per cent of the coffee trade. The competition from this market will be necessarily stiff on account of its proximity. British East Africa and India are on a par and get between them about 22 per cent of the trade.

New Zealand is also a tea drinking country. About 10 lb. of tea per head is consumed as against 0.3 lb. of coffee. Consumption of coffee seems to have increased by about 40 per cent in 16 years, between 1920 and 1936. *Robusta* from Java accounts for nearly 50 per cent of the trade. The imports from India consist entirely of the better grades of *arabica* plantation.

About 99 per cent of the imports into Ceylon come from Java. Cheap *robusta* grown in Java seems to have ousted India from the market. Imports from India in the decade ending 1919-20 averaged about 13,400 cwt. They dropped perceptibly after 1919-20 and are now only about 200 cwt. a year. The possibilities of introducing Indian *robusta* as against *robusta* from Java deserve to be explored. Ceylon with its large Indian population should provide an outlet for the cheaper Indian coffees.

The Malaysians are said to be coffee drinkers and the Chinese are increasingly taking to it. India does not export any coffee to British Malaya. The possibilities of marketing Indian coffees particularly *robusta* should be explored.

The Indian exports to Mauritius amounted to about 1,900 cwt. before the 1914 War but afterwards the imports dwindled to about 175 cwt. and since 1925 India has been out of the picture entirely.

In Bahrien Islands, India seems to be making headway. In 1936-37 her exports amounted to 1,066 cwt. and in 1937-38 to 3,053 cwt.

India's position in the Persian Gulf markets appears to be improving. The annual average imports in the quinquennium ending 1935-36 were 5,710 cwt. In 1936-37 they rose to 8,636 cwt. and in 1937-38 to 15,678 cwt. which is more than twice the annual average quantity imported in the 4 year period ending 1935-36. Mysore plantation "A", "B", "C", and "Mixed" are in demand. Assortment of cherry "B" and "C" has also a good market. Iraq buys more than half the quantity imported through Persian Gulf ports.

The United States of America is the foremost importer of coffee and takes nearly 50 per cent of the world imports. It takes in more than half of the Brazilian exports, about 83 per cent of Colombian, 30 per cent of Jamaica, 16 per cent of East African and 6 per cent of Dutch East Indies. In the course of the last 25 years the imports of coffee seems to have nearly doubled. It seems remarkable that Indian exports to United States of America are negligible.

Beans shipped to the United States of America should be carefully graded as to size. Brazilian and Kenya grading are considered satisfactory. Variations in size between the contents of different bags are apt to hamper expansion of market for Indian coffee. One consignment of 500 bags of Empire coffee imported into United States of America had 87 different marks, each of which had to be tested by a taster. This makes business difficult in a country where standardised products are essential for the large multiple shops and chain stores.

A steady increase in the *per capita* consumption shows the ever increasing popularity of the beverage in the United States. In the last sixty-seven years the consumption has more than doubled. It is said that the place coffee occupies today in America is, to a considerable extent, due to prohibition which was inaugurated in 1919; but statistics show that prohibition was only a contributory factor and that coffee made its way to the fore-front on its own merits. Even after prohibition was lifted there has been a steady increase in consumption. In Europe the increase in the consumption of coffee is not so pronounced as in the United States of America. It is more marked in France, Sweden and Denmark than in other countries. Belgium, Germany Italy, Switzerland and Greece have not registered any appreciable increase.

Indian coffee is not sold in the form in which it is exported from this country to the retailers on the Continent. It is used for blending with other coffee especially Central and South Americans to give the necessary flavour to the latter.

France stands at the top of the coffee importers in Europe and is one of the biggest consumers of Indian coffee. The share of India is, however, only 1.4 per cent of the total. Imports of coffee come under French quota system, which are fixed periodically and are subject to license. Quotas have not, however, hindered India's trade as they are normally

in excess of India's share of the imports. Extensive propaganda is carried on for Brazilian coffee in France, and it is sold exclusively in some subsidised special cafés.

The systematic propaganda carried on by Brazil and Colombia is a feature of the German market and has helped to push up the imports of Colombia in recent years.

India's share in the imports into Norway is only about 2 per cent but it is gradually increasing. From 12,000 cwt. in the 5 year period 1926-30, the imports rose to an annual average of about 22,000 cwt. in the quinquennium ending 1938—an increase of more than 83 per cent. India has a large potential market in Norway and the ground gained needs to be followed up. Faded coffees have a market in Norway, and there is also some demand for *liberica*. The Norwegian importers buy mainly on appearance rather than on liquoring quality.

Sweden is at the very top with 16·6 lb. consumption of coffee per head. Coffee is either imported in bulk from the producing centres or bought in Amsterdam, Hamburg or London by Swedish wholesalers. It is unfortunate that direct Indian exports to Sweden are so small. In view of the fairly high demand for "mild" coffees, further attempts should be made by India to tackle the Swedish market as India can offer both quality and price coffees.

Netherlands is gradually losing its place as one of the foremost transshipping centres of coffee on the Continent. Business is carried on through agents or brokers who often enter into collusion with buyers to the detriment of the Indian exporters, who are compelled to apply to London for arbitration. It is believed that an intelligent and discriminate use of brokers would serve to increase the Indian coffee trade. Indian imports are scarcely 1 per cent of the total. The heavy shipments in 1936 from India appear to have adversely affected the imports of Indian coffee in 1937 and 1938. But in 1939 9,461 cwt. were exported to Belgium by July, which indicates that India's position in the Belgium market has not suffered.

The annual average imports of coffee into Denmark during the last 5 years were about 550,000 cwt. Indian imports into Denmark have gone up by more than 90 per cent since the last War (1914-18). The demand is mostly for Mysore plantation top grades. The possibilities of putting in cheaper Indian coffees deserve to be explored. It must be remembered that 65 per cent of the total takings

are "milds". Intensive propaganda is carried on by the Brazilian Government and special restaurants are being run in the busiest quarters of Copenhagen for selling Brazilian coffee exclusively.

Indian imports into Italy have considerably fallen from 1936. India was building up her coffee trade with Italy when the sanctions against Italy came into force in 1936. The exports dwindled from 8,593 cwt. in 1935 to 1,104 cwt. in 1936. Italy is since reported to be taking increasingly to Abyssinian coffee but the market for higher quality coffees from India might be developed again.

Brazil practically enjoys a monopoly in Yugoslavia. More than 84 per cent of the imports are from Brazil while India's share is only 0.4 per cent. A small quantity is re-exported to Albania. Cheap coffee substitutes like roasted barley are in use. Essences and tablets are not used.

Brazilian imports into Greece are increasing from year to year. In 1936 they were about 98 per cent of the total. Brazilian bold bean is said to be the most popular type. Colombia and Venezuela coffees are imported through trade clearing arrangements. Limited quantities of *robusta* are also imported. Brazil carried on a big propaganda campaign by advertising in restaurant cars, on railways and in local press.

Statistics from Switzerland show that Indian imports are increasing and amounted to about 16,761 cwt. in 1936. Most of the Indian coffee finds its way into Switzerland through Antwerp. Consumers usually buy their coffee roasted and ground in their presence.

In Turkey, Brazil holds the monopoly at the exporting end and a semi-government concern appears to hold the monopoly for importing coffee into Turkey.

The Japanese are said to prefer Brazilian coffee as it helps their nationals who are employed in coffee plantations in Brazil. Almost all the Japanese emigrants who started going to Brazil in large numbers in 1906 have settled on coffee plantations. The State of Sao Paulo made special efforts by shipping 400 bags of coffee every year free of charge. Brazil and Java practically monopolise the trade in Japan. Since British East Africa is able to market about 1,117 cwt. India should also be able to sell some of her cheaper coffees.

The consumption of coffee appears to be gradually increasing in Burma. The consumer's preference for "French"

coffee (*i.e.*, mixed with chicory) is evident, and the demand for it is increasing. The comparative cheapness of "French" coffee and the idea that it gives better flavour and body in the cup on account of the admixture of chicory are the main reasons for its increased consumption. Tablets and "French" coffee with a high percentage of chicory are much in demand in the small coffee shops and among the labourers. Consequent on the increase in demand for "French" coffee, the consumption of "Pure" coffee in tins is going down.

CHAPTER III.—PRICES.

A.—Introductory.

Coffee has a larger range of quality than many other agricultural products. The quality varies in the same type, variety and season from district to district and from plantation to plantation. The curers in Mangalore, Tellicherry, Calicut, Coimbatore, Hunsur and Mysore do a certain amount of grading on the basis of type, variety, size and appearance of the bean. However, as discussed in detail in the chapter on Classification, grading and standardisation, the grades of curers vary from place to place and even in the same place. Besides the curers there are a large number of merchants, who do some kind of grading of coffee. The variations in grades and grade designations of such coffee from one merchant to another are considerable. Garbling, re-garbling and mixing by dealers during the various stages of distribution destroy any semblance of uniformity in the coffee that comes from the curer. The price quotations, therefore, are not comparable or intelligible to anyone except the persons directly concerned in each case. As such, they are not of much commercial value. The weekly coffee circulars issued by the Mangalore Curers' Association quote average prices for "Plantation" coffee by grades, namely, "A", "B", "C", "Triage" and "Peaberry" and also for "Assortment", but without reference to the areas from which the coffee is drawn. The prices lose their full significance unless they are quoted in relation to particular types. The Indian Trade Journal quotes prices at Bangalore market for Nilgiri "Plantation" Peaberry, "Cherry-dried" (Native) Peaberry and "Flats". It does not, however, give prices of Mysore, Coorg or Shevaroy's coffee which are marketed in Bangalore. In view of the extreme difficulty of working out a dependable uniform system of price quotations in the absence of types and standard grades, the best that can be done is to trace the prices as they are quoted at present for the existing trade descriptions of coffee.

B.—Trend.

(1) PRICES OF INDIAN AND OTHER COFFEES ON THE WORLD MARKET.

The world price of coffee and the demand in South India are the chief factors that influence the course of prices of Indian coffee. Regarding the world price, Brazil dominates the situation and practically holds the key to coffee prices in general. As a direct result of the enormous stocks of coffee held in Brazil and the increase in production, the world price of coffee fell appreciably in 1929. The reaction of the collapse of Brazilian prices on Indian coffee was, however, apparent only in 1930. Appendix XXI shows the monthly prices in the London market of Brazil, Costa Rica and Indian coffee

from 1934. See also diagrams facing this page and page 119. The following table indicates the trend of world prices :—

Annual average price of coffee in London market.

(In shillings per cwt.)

	Indian.*	Kenya.†	Costa Rica.*	Brazilian* Santos Superior.
	s. d.	s. d.	s. d.	s. d.
1928	127 8	106 10	150 5	102 3
1929	127 4	115 6	135 0	95 3
1930	86 2	77 6	108 4	56 10
1931	81 3	74 11	114 2	44 5
1932	93 3	85 1	107 3	63 1
1933	73 7	63 4	103 9	50 11
1934	71 2	68 4	99 7	48 11
1935	57 6	68 8	71 9	39 8
1936	51 5	65 1	64 8	40 4
1937	63 8	75 7	67 10	49 7
1938	60 2	\$69 0	60 3	31 4
1939‡	58 4	\$61 5	69 6	29 11

The price of Indian coffee in London touched the lowest point in 1936. In 1937 the world prices moved up slightly due mainly to the decision of the Coffee Congress at Bogota to sustain the price of all American coffee at a level decided by the Brazilian Government. But in November 1937, Brazil announced a reduction of 75 per cent in the export tax on coffee and prices again dropped in 1938.

It will be observed that the fall in the price of Brazilian coffee is much sharper than in the case of Indian, Costa Rica and Kenya. Unfortunately there is nothing to indicate that the fall in the price of Santos coffee has reached rock bottom.

(2) WHOLESALE PRICES IN INDIA.

The price index series issued by the Economic Resources Board of the Government of India showing the weekly movement of prices of certain selected commodities with week ending 19th September 1931 as basis, and another series with week ending 19th August 1939 as basis, indicates that coffee prices unlike tea and tobacco and most of the other commodities are well below the average prices of 19th September 1931, inspite of the general increase in prices of other commodities after the War. While the index number of wholesale prices for tea and tobacco for week ending 9th January 1940 was 230 and 240 respectively, that for coffee was only 81 on the basis of prices on 19th September 1931. This is significant as indicating the serious nature of the problem facing

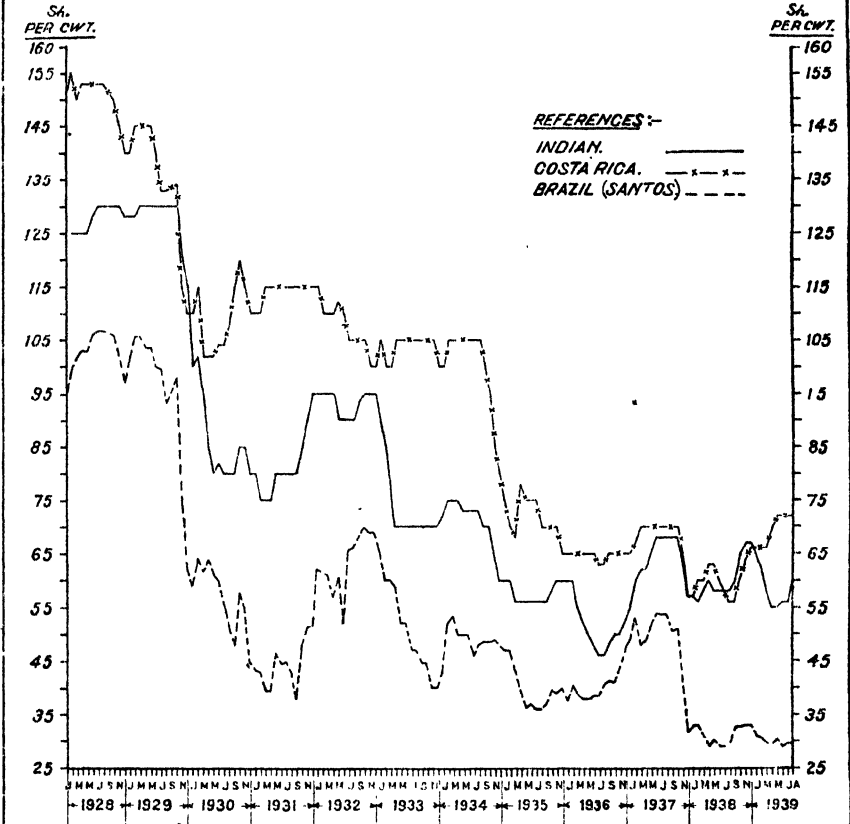
* Rouse & Co. statistics.

† Plantation crops.

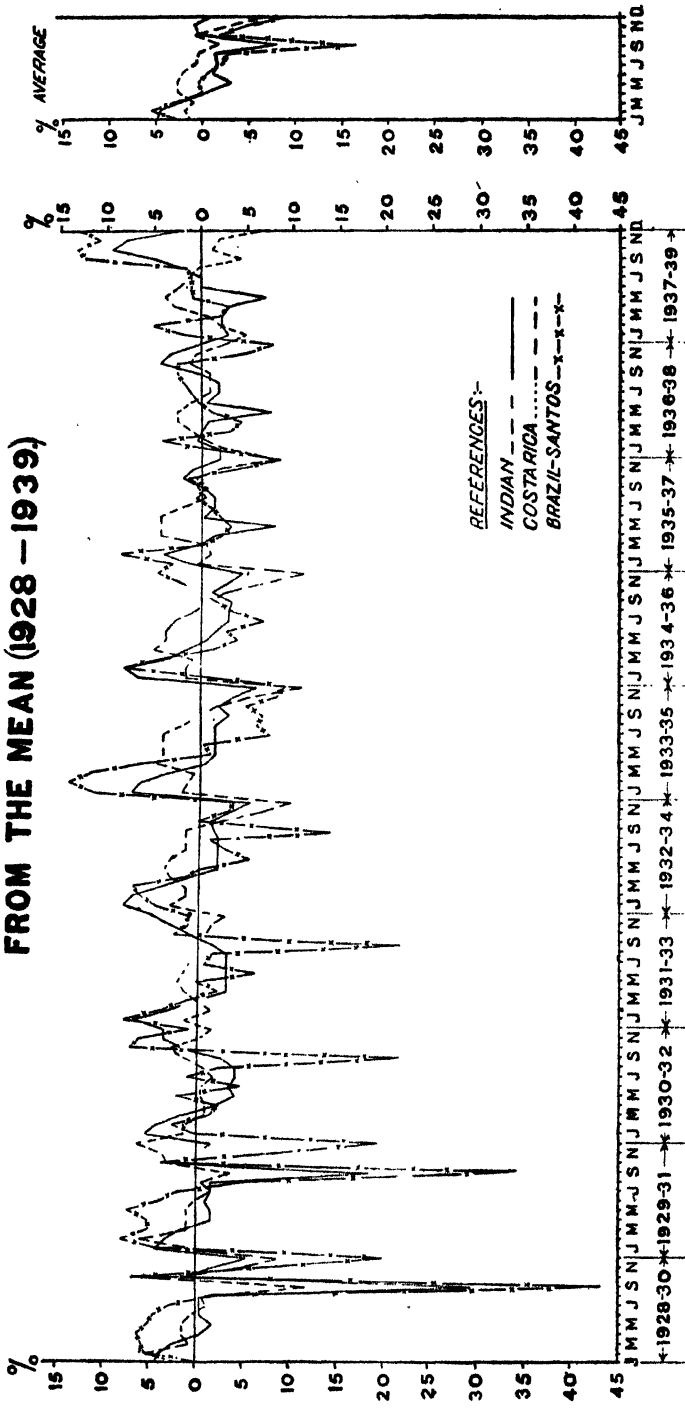
‡ Up to August 1939.

§ The Coffee Board of Kenya monthly bulletins

MONTHLY WHOLESALE PRICES OF INDIAN, COSTA RICA
AND BRAZIL (SANTOS) COFFEES IN LONDON.



PERCENTAGE DEVIATION OF THE MONTHLY WHOLESALE
PRICES OF COFFEE IN LONDON
FROM THE MEAN (1928 - 1939)



coffee producers. The following notes give the particulars regarding different markets and various types of coffee in India :—

(a) *Export markets—Arabica plantation, Mangalore.*—The curer's average seasonal prices of different descriptions of coffee in Mangalore market during the last 6 years were as under :—

Average seasonal prices of coffee in Mangalore.

(Per cwt.)

—	1933-34.	1934-35.	1935-36.	1936-37.	1937-38.	1938-39.	1939-40.*	Average for 1933-34 to 1938-39.
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
Plantation "Pb"	68 2 0	61 8 0	42 6 0	52 11 0	45 15 0	41 4 0	52 1 0	51 15 8
Plantation "A"	45 5 0	42 4 0	32 6 0	36 11 0	31 8 0	32 7 0	45 9 0	36 12 2
Plantation "B"	41 9 0	39 5 0	28 13 0	34 2 0	29 0 0	30 2 0	42 13 0	33 12 10
Plantation "C"	38 6 0	35 12 0	26 4 0	31 15 0	25 13 0	29 5 0	40 12 0	31 3 10
Plantation "Triage"	35 8 0	35 0 0	24 1 0	29 14 0	22 6 0	27 0 0	39 8 0	28 15 0
F. A. Q. "Assort- ment"	48 2 0	42 13 0	31 11 0	36 11 0	31 12 0	32 10 0	44 12 0	37 4 6
Percentage rise or fall.	...	—11·03	—25·98	+15·77	—13·45	—2·75	+37·16	...

The curers' prices represent the gross realisation of the producer *plus* the curing charges, commission on sales and transport and miscellaneous charges incurred during curing.

Appendix XXIII and the diagrams facing pages 120 and 121, show the trend of prices from 1933-34 to 1939-40. It will be observed that prices followed a downward trend from 1933-34 to 1935-36, the fall being particularly severe in 1935-36, when it dropped by over 25 per cent on the previous year. There was a slight recovery in 1936-37, but it dropped again in the next year to 1935-36 level. 1938-39 showed a small increase and with the outbreak of the European War, this increase has been kept up in 1939-40. The trend of prices in Mangalore as discussed earlier depends very largely on world prices. The marketing period is seasonal beginning from the end of November and closing towards the end of May. During the remaining period there is little activity in the market.

Tellicherry.—The Tellicherry prices follow the trend of Mangalore level in a general way though the margin may vary. This is shown in the table below :—

Prices of "Assortment" coffee in Tellicherry and Mangalore.

(Per cwt.)

	Tellicherry. Rs. A. P.	Mangalore. Rs. A. P.
1936-37	35 12 0	36 4 0
1937-38	30 4 0	31 12 0
1938-39	32 3 0	32 10 0

* From November to March.

The trend of prices in Tellicherry closely approximates to that of Mangalore. The Mangalore prices may be regarded as typical of the prices in other export markets like Tellicherry and Calicut, but not necessarily of other markets serving the internal market in India as will appear later.

Arabica cherry, Mangalore.—The following figures indicate the average annual price of cherry in Mangalore during the last six years :—

Price of arabica "Cherry" coffee in Mangalore.

(Per cwt.)

	Rs.	A.	P.
1933-34	38	7	0
1934-35	37	12	0
1935-36	29	15	0
1936-37	32	4	0
1937-38	25	1	0
1938-39	26	3	0
1939-40	30	8	0

Compared with the prices of "Plantation" coffee, cherry is cheaper, because of its quality. The general trend of cherry prices closely follows that of "Plantation" coffee. Prices dropped by about Rs. 9 per cwt. from 1933-34 to 1935-36. They recovered slightly in 1936-37, but again fell in 1937-38. In 1938-39 there was a slight improvement. Prices in 1939-40 indicated an upward trend in sympathy with plantation prices.

(b) *Internal markets*—(i) *Distributing areas*—Arabica "Plantation".—The general trend of prices in the distributing areas serving the Indian markets e.g., Coimbatore, Salem, Mettupalaiyam and Virudhunagar is similar to Mangalore. The following table shows the trend in the chief centres :—

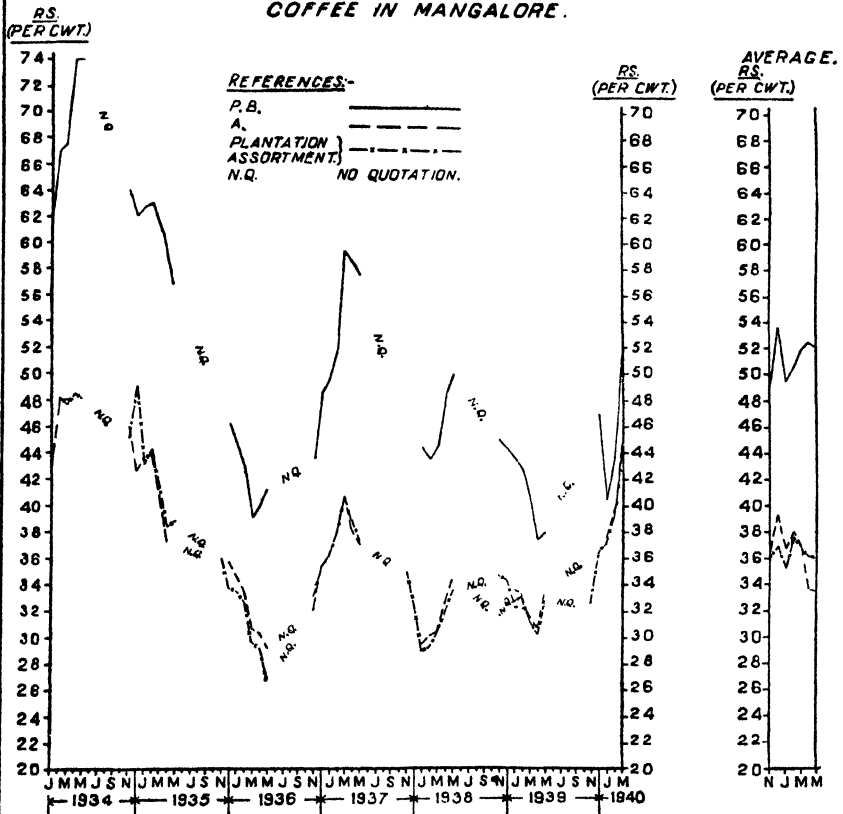
Price of arabica "Plantation" assortment.

(Per cwt. in Rupees.)

	Coimbatore.	Salem.	Mettupalaiyam.	Virudhunagar.
	Rs. A.	Rs. A.	Rs. A.	Rs. A.
1933-34	51 6	49 11	49 8	48 2
1934-35	38 6	38 3	43 1	42 9
1935-36	33 5	31 12	33 10	29 5
1936-37	41 11	39 4	39 6	33 7
1937-38	35 6	33 2	32 7	31 2
1938-39	35 14	32 14	32 8	32 0

Prices steadily dropped till 1935-36. There was a slight recovery in 1936-37 but a fall again occurred in 1937-38. In 1938-39, they improved slightly in sympathy with the prices in export markets in India and the world prices.

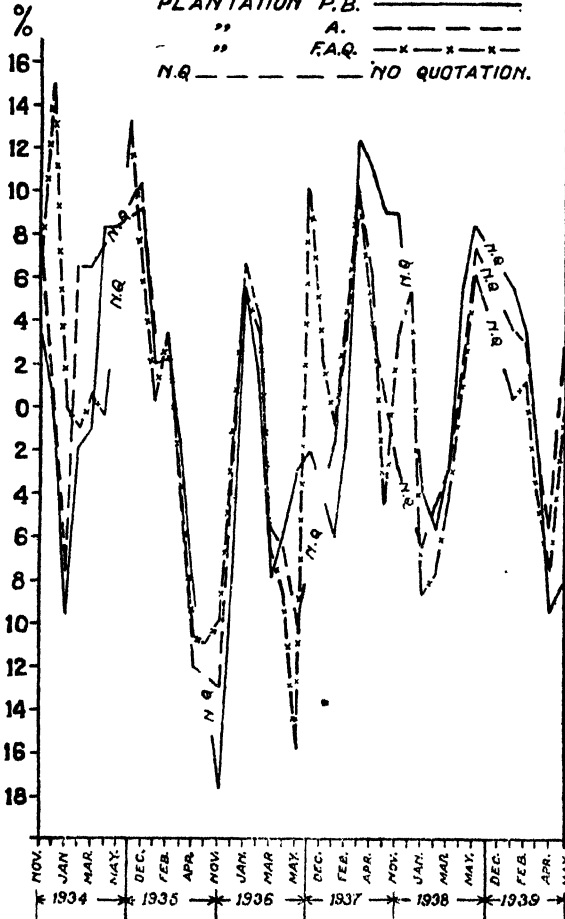
**CURERS AVERAGE MONTHLY PRICES FOR "PLANTATION"
COFFEE IN MANGALORE.**



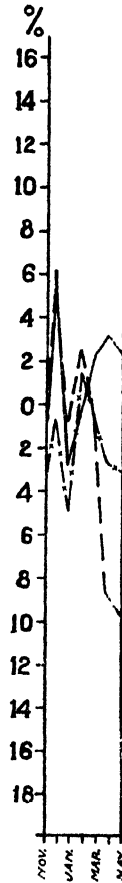
PERCENTAGE DEVIATION OF THE AVERAGE MONTHLY WHOLESALE PRICES FROM THE ANNUAL MEAN IN MANGALORE. (1934-1939.)

REFERENCES:-

PLANTATION P.B. —————
" A. - - - - -
" F.A.Q. - x - x - x -
N.Q. - - - - - NO QUOTATION.



AVERAGE.



Arabica cherry.—The price of *arabica* cherry follows the same trend as “Plantation” coffee in the internal markets. The prices in Bangalore and Virudhunagar may be taken as typical :—

Prices of arabica “Cherry” coffee.

(Per cwt. in Rupees.)

	Bangalore.	Virudhunagar.
	Rs. A. P.	Rs. A. P.
1932	54 1 0	54 0 0
1933	47 13 0	43 15 0
1934	41 1 0	40 14 0
1935	36 1 0	34 10 0
1936	32 10 0	19 11 0
1937	34 8 0	27 1 0
1938	30 7 0	23 2 0
1939	35 0 0	28 2 0

Although the prices in 1939 showed an improvement on the previous year, they were only about 64.7 per cent in the case of Bangalore, and about 52.1 per cent in the case of Virudhunagar of the 1932 prices.

Robusta.—*Robusta* is not exported. Calicut, Mangalore and Virudhunagar are the main distributing centres for *robusta* coffee. The following table shows the trend :—

(Per cwt. in Rupees.)

	Calicut.	Mangalore.	Virudhunagar.
	Rs. A. P.	Rs. A. P.	Rs. A. P.
1936	20 10 0	22 8 0	22 8 0
1937	20 10 0	23 14 0	23 15 0
1938	20 4 0	20 12 0	22 1 0
1939	20 1 0	20 13 0	22 9 0

Robusta prices have not shown any marked trend as in the case of *arabica* plantation or cherry. As *robusta* is generally not exported the reaction of world prices is less pronounced than in the case of the other varieties. The fact that the internal Indian market is to some extent insulated against the price shocks experienced on the world market is a point of some significance to producers considering a marketing policy.

(ii) *Consuming areas*.—In the consuming areas in India, prices on the whole reflect to some extent the trend of world prices. The table below shows the position :—

Price of “Assortment” coffee.

(Per cwt. in Rupees.)

	Madura.	Travancore.	Bangalore.	Bombay.
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
1934-35	48 0 0	41 0 0	46 10 0	55 7 0
1935-36	37 1 0	38 0 0	45 13 0	42 0 0
1936-37	40 2 0	35 0 0	41 15 0	44 1 0
1937-38	36 14 0	36 0 0	38 3 0	42 0 0
1938-39	37 12 0	40 0 0	37 4 0	43 0 0

In the case of Travancore and Bangalore, the prices in 1936-37 dropped quite contrary to the general tendency of coffee prices to rise during the period.

(3) RETAIL PRICES IN INDIA.

The trend of retail prices in India, as for wholesale prices, has been downward as the following table shows :—

—	Madras city.	Travancore.	Bombay.	Delhi.
	" Flats. "	" Pb. "	" Flats. "	" Pb. "
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
1933	63 5 0		57 8 0	98 0 0
1934	60 5 0		55 3 0	91 0 0
1935	50 10 0	62 9 0	57 0 0	84 0 0
1936	44 8 0	61 2 0	55 12 0	77 0 0
1937	47 10 0	55 12 0	54 6 0	77 0 0
1938	45 14 0	59 5 0	53 5 0	84 0 0
1939	46 2 0	59 10 0	53 4 0	84 0 0

The trend is however different in different areas. In Madras city there was a gradual fall up to 1936 ; in Travancore prices declined up to 1937 ; Bombay showed a gradual fall up to 1939 and in Delhi prices went down up to 1937 and recovered in 1938. The fall in the case of " Pb. " in Travancore amounts to 4.7 per cent and in the case of " Flats " at Bombay to 6.6 per cent, but the wholesale prices of Indian coffee in London increased by about 1.5 per cent during the same period.

C.—Seasonal variations.

(1) WORLD AND INDIAN PRICES.

From the diagram facing page 118 which shows the movement of prices of Indian, Costa Rica and Santos coffees in the London Market, it will be observed that on the whole the seasonal variations in prices maintain a degree of sympathy between the different types. Prices are generally above the average in January. February appears to be the peak month. The price sags in March and the downward trend continues till September in which month there is a sharp fall. Prices recover in October and rise as sharply as they fall in September. In December the prices again fall but improve in January. From April to December prices are usually below the average. The prices of Brazilian coffee fluctuate more violently than Indian or Costa Rica, and Indian prices fluctuate more than Costa Rica. The highest price realised for Indian coffee in London is generally in January and February. The best season to market Indian coffee in London appears to be from January to April.

(2) INDIAN PRICES.

(a) *Export markets—Mangalore.*—The diagrams facing pages 120 and 121 and Appendix XXIII show the seasonal variation in prices. The price usually starts low in the beginning of the season and is also below the average towards the close of the season in May. There is generally a rush of sales towards the end of the season, i.e., in April and May, when the prices drop.

In 1936-37, on account of the rather large stocks of unsold Indian coffee in London, prices opened low but due to the Bogota Coffee Congress decision



PICKING.

[By courtesy of the Department of Agriculture, Mysore State.]



PICKING UNRIPE BERRIES.

AVERAGE PRICE OF COFFEE (1936-37 TO 1938-39) AND COST OF STORAGE IN COIMBATORE, SALEM AND METTUPALAYAM.

HUNDRED
RS.

REFERENCES:-

HARVEST TIME PRICE PLUS
ESTIMATED CARRYING CHARGES.

PRICES (PER TON)

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they gradually rose. From March the price showed a tendency to sag. It gradually worked downwards till it reached the bottom in April and May. The accumulation of unsold stocks and the necessity of disposing of stocks on the export market before the end of the season appears to depress prices in Mangalore. A detailed review of the position from month to month for two seasons will serve to show the different factors that are at work in shaping prices. In the beginning of the season 1937-38 the announcement by Brazil of the reduction of the export duty on coffee by almost 75 per cent made the market apprehensive. A fall in Santos prices in December had its reactions on the Mangalore market and prices declined by about Rs. 2-7-0 per cwt. The situation worsened in January 1938. There was a very slight improvement in February due to the buyers trying to cover their February forward commitments. March prices were uniform on account of demand from Persian Gulf ports and also local speculation. But the demand from Europe was still conspicuous by its absence. The prices were maintained and showed some improvement in April and May due to local buyers for the Indian markets. Prices in November 1938 were slightly above the average of the season 1938-39 as stocks in India of old crop were estimated to be below normal. Prices improved slightly in December. The under-tone of the market was unsteady in January as the buyers kept aside and the prices weakened. The market became firmer in February when the buyers evinced more interest. It was dull in March due to a tightening up of credit facilities locally. In the absence of export demand the market further deteriorated in the beginning of April. But later, prices slightly improved due to demand from Persian Gulf. The market was easier in May 1939. The above detailed review of the position shows that factors both local and foreign have a bearing on prices in the Mangalore market but the outside market has more influence on Mangalore than the Indian trade.

The seasonal variation in prices in the London market does not appear to be quite the same as in the export markets in India due perhaps to a certain amount of time-lag. While the prices in India tend to rise in December, they are usually at the lowest in London, but in January prices improve in the London market, while in India they sag. Towards April and May, however, prices drop both in London and the export markets in India, while on the internal markets in India prices generally improve after May and are above the average from June to October.

(b) *Internal markets—(i) Distributing areas.*—The diagram opposite this page shows the monthly movement of prices in interior markets such as Coimbatore, Mettupalaiyam and Salem. Prices are generally below the average of the season in the export markets of Mangalore and Tellicherry during the coffee season, *i.e.*, from November to May. The upward tendency starts from April but prices are only above the average of the season by June. June, July and August which are off-season months in the export markets are the peak months in the interior markets. It may be observed, however, that the planters do not benefit from the higher returns realised in June, July, August, September and October on the internal markets as the stocks are practically all out of their hands by the end of May.

(ii) *Consuming areas.*—The monthly variations in prices in consuming centres such as Travancore, Bangalore, Calcutta, Lahore and Delhi do not show any pronounced periodicity. Appendix XXIV (a) to (c) gives the movement of prices in Travancore, Bangalore and Calcutta.

In Travancore, prices are usually below the average during the monsoon months in June, July and August on account of the difficulties of transport and virtual suspension of agricultural activities.

In Bangalore, prices generally improve towards June in sympathy with Coimbatore and other distributing centres.

Northern India.—Coffee is imported only in small quantities in Northern Indian markets where the total consumption does not exceed 15,000 cwt. Though the general trend of prices in the North from year to year is the same as in the South the monthly variations in the whole-sale prices in the producing centres are not reflected to any appreciable extent.

Bombay.—The following table shows the seasonal variations in prices at Bombay :—

Monthly wholesale prices (Assortment).

(Per cwt. in Rupees.)

	1936-37.			1937-38.		
	Rs.	A.	P.	Rs.	A.	P.
November	55	0	0	48	0	0
December	55	0	0	48	0	0
January	57	0	0	48	0	0
February	57	0	0	52	0	0
March	65	0	0	52	0	0
April	65	0	0	52	0	0
May	65	0	0	52	0	0
June	66	0	0	66	8	0
July	66	0	0	66	8	0
August	66	0	0	66	0	0
September	68	0	0	66	8	0
October	68	8	0	66	0	0

The periodicity in monthly prices in the consuming centres approximates to a certain extent the price variations in the chief distributing centres in the South. Prices start low but get firm towards the middle of the coffee season, i.e., February and March and in the off-season months, i.e., June, July, August, September and October, they show a tendency to rise.

Bengal.—The prices in Calcutta may be taken as representative of the price movements in the other provinces and States in Northern India. The average monthly wholesale prices of Nilgiri "Peaberry" and "Assortment" and Cherry "Peaberry" and "Assortment" at Calcutta are given in Appendix XXIV (c). The prices here as in Bombay are above the average during the off season, viz., from May to November.

Punjab.—The prices in Lahore fluctuate very little and do not generally react to the prices in the curing centres in the South. The price of "Peaberry" remained at Rs. 54-4 per cwt. in 1934 up to September when it dropped to Rs. 52-8 per cwt. It remained at Rs. 52-8 for the whole of 1935 and up to August 1936. In September 1936 it fell to Rs. 50-12. This divergence shows a distinct lack of direct contact between the trade in Southern and Northern India.

D.—Comparison of prices.**(1) VARIOUS TYPES IN DIFFERENT MARKETS IN INDIA.**

(i) Arabica "*Plantation*" coffee.—The following table gives a comparison of the average prices of different types of coffee in the chief centres of distribution in South India :—

Prices of "Plantation" assortment coffee.

(Per cwt.)

Type.	Market.	1936-37.	1937-38.	1938-39.
		Rs. A. P.	Rs. A. P.	Rs. A. P.
Mysore . .	Mangalore . .	37 11 0	30 8 0	33 0 0
Coorg . .	Mangalore . .	37 8 0	30 5 0	32 10 0
Coorg . .	Tellicherry . .	37 6 0	29 13 0	32 4 0
Nilgiri . .	Coimbatore . .	43 12 0	37 12 0	38 2 0
Nilgiri . .	Mettupalaiyam . .	39 6 0	32 7 0	32 8 0
Shevaroy . .	Coimbatore . .	41 9 0	35 7 0	35 9 0
Shevaroy . .	Kannankurchi . .	39 4 0	33 2 0	32 14 0
Anaimalai . .	Coimbatore . .	39 12 0	33 0 0	34 0 0
Palni . .	Dindigul . .	28 5 0	30 6 0	29 6 0
Palni . .	Virudhunagar . .	33 12 0	29 0 0	29 0 0

While Nilgiri leads with a premium over all the other types, Palni brings up the rear, the difference being from Rs. 8 to Rs. 15 per cwt. The prices realised for Coorg coffees in Mangalore are generally slightly higher than those obtained in Tellicherry as the Mangalore market offers a better forum for competitive buying. The price for Coorg coffee is slightly lower than for Mysore. Anaimalai commands better prices than Mysore and Shevaroy sold in Coimbatore gets a better price than Anaimalais. That better methods of preparation pay is proved by the fact that Nilgiri coffee sold in Coimbatore gets a premium of about Rs. 5 per cwt. over that marketed in Mettupalaiyam. The bigger planter who prepares the coffee carefully sends it to Coimbatore for curing and selling while the smaller planter gets his coffee cured and sold in Mettupalaiyam. For the same reasons, Shevaroy coffee sold in Coimbatore fetches about Rs. 2 to Rs. 3 more than that sold in Kannankurchi at the foot of the Shevaroy Hills. Palni coffee fetches a comparatively lower price as it is prepared for market in an unsatisfactory manner. With better methods of preparation and marketing, and more precise definition of qualities and grades, along with an improved daily market news service, the price margin between the various types of coffees and for the same type of coffee in adjacent markets would be much narrower than at present to the advantage of local producers.

The following table indicates the price realised for different grades in Mangalore market from 1933-34 to 1938-39 :—

Price of different grades of coffee in Mangalore.

(Per cwt. in Rupees.)

Period.	"Peaberry."	"A."	"B."	"C."	"Triage."
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
1933-34 . . .	68 2 0	45 5 0	41 9 0	38 6 0	35 8 0
1934-35 . . .	61 8 0	42 4 0	39 5 0	35 12 0	35 0 0
1935-36 . . .	42 6 0	32 6 0	28 13 0	26 4 0	24 1 0
1936-37 . . .	52 4 0	36 4 0	34 2 0	31 15 0	29 14 0
1937-38 . . .	45 15 0	31 8 0	29 0 0	25 13 0	22 6 0
1938-39 . . .	41 4 0	32 7 0	30 2 0	29 15 0	27 0 0
Average . . .	51 15 0	36 11 0	33 13 0	31 6 0	29 0 0

"Peaberry" commands the best price and enjoys a premium of about Rs. 15 per cwt. over "A" as the consumers in South India have a partiality for "Peaberry". But the price margin between "Peaberry" and "Flats" is apparently getting smaller. In 1933-34, "Peaberry" got a premium of about Rs. 23 over "A" while in 1938-39, it was only about Rs. 9 per cwt. and during the season (1939-40) it appears to be going down further, being about Rs. 3 only. The price margins between "Peaberry" and "A" and "Peaberry" and "Triage" are indicated below :—

Price difference between "Peaberry" and "A" and "Peaberry" and "Triage".
(Per cent)

	Between "Peaberry" and "A".	Between "Peaberry" and "Triage".
1933-34	33.5	47.9
1934-35	31.8	43.1
1935-36	23.6	43.2
1936-37	30.4	43.3
1937-38	31.4	51.3
1938-39	21.4	34.5

The difference in prices between "Peaberry" and "A" dropped from 33.5 per cent in 1933-34 to 21.4 in 1938-39 and between "Peaberry" and "Triage" from 47.9 per cent to 34.5 during the same period.

The margin between "A" and "Triage" also is getting narrower as the following table shows :—

	Per cent.
1933-34	21.7
1934-35	17.2
1935-36	25.7
1936-37	18.6
1937-38	29.0
1938-39	16.8
1939-40	12.2

This points to the tendency in the market to substitute inferior grades for superior ones and to a reprehensible but growing demand for "Triage" for use in regarbling and mixing. Further, as explained in the Demand chapter, consumers who used to buy raw coffee and roast it themselves are increasingly taking to ground coffee, and the manufacturers who sell ground coffee are probably going in for cheaper grades and mixtures to make a better margin. This is detrimental to the coffee industry in general and can only be overcome by the recognition and adoption of standard grades for the raw and manufactured products.

(ii) *Arabica "Cherry" (Native) coffee*.—“Cherry” coffee is classified by the trade in Mangalore, Tellicherry and Calicut into (a) coast cured whole crop cherry and (b) estate pounded cherry. Coast cured cherry is of better quality than estate pounded as it is garbled properly and prepared by the curers for the market. Coast cured cherry fetches about Rs. 2 to Rs. 5 per cwt. more than estate pounded.

In 1938-39, the average annual price of coast cured cherry was Rs. 6.2 per cwt. less than that of plantation in Mangalore. This is due to the fact that cherry is inferior in quality compared with plantation.

(iii) *Robusta*.—*Robusta* is generally not exported and its price movements depend on the demand in the internal markets. The price realised by *robusta* in some of the chief markets is given below :—

	1939 (Per cwt.) Rs. A. P.		
Mangalore	20	13	0
Calicut	20	1	0
Travancore	16	0	0

Mangalore and Calicut *robusta* prices are about Rs. 12 per cwt. below *arabica* plantation and Rs. 6 per cwt. below *arabica* “Cherry” coffee, while Travancore *robusta* is about Rs. 15 to Rs. 16 below *arabica* plantation and Rs. 10 lower than *arabica* cherry. *Robusta* from Mysore, Coorg, Wynaad and Palni fetches about the same price, while *robusta* from Travancore is generally Rs. 4 to Rs. 6 per cwt. lower than others as it is prepared in a very primitive way.

(2) WHOLESALE AND RETAIL PRICES IN INDIA.

The difference in prices between the wholesale and retail markets in India is also worth examination. Owing to the fall in wholesale prices the margin has been growing rapidly and is now very wide as the following table indicates :—

(Per cwt. in Rupees.)

—		Wholesale price in Mangalore (Peaberry).	Retail price in Delhi (Peaberry).	Margin.
		Rs. A. P.	Rs. A. P.	Rs. A. P.
1934		68 0 0	98 0 0	30 0 0
1935		61 8 0	91 0 0	29 8 0
1936		42 6 0	84 0 0	41 10 0
1937		52 11 0	77 0 0	24 5 0
1938		45 15 0	84 0 0	38 1 0
1939		41 4 0	84 0 0	42 12 0

The possibilities of reducing this price margin have to be looked into. The small turnover in coffee in the North and absence of a proper market news service applicable to recognised standard grades of coffee are mainly responsible for the large difference between the wholesale price in the South and retail price in the North.

(3) IN INDIA AND THE UNITED KINGDOM.

The comparative table given below indicates the relation between prices realised for some of the grades of Indian coffee in London and in India. The prices in Mangalore have been taken to represent the level of Indian prices as Mangalore is the biggest market for coffee in India both for export and internal trade purposes. But it must be remembered that the "O" shipped to London consists of the top qualities of Indian coffee and is not therefore strictly comparable with Mangalore "A" and likewise London "A" is considered to be slightly superior to Mangalore "B". The comparison of Indian prices with that of London should therefore be made with the above reservation.

Prices of Indian coffee in London and in India.

(Per cwt. in Rupees.)

		"Peaberry".	"O".	"A".	"B".	"Triage".
		Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
1934	London . . .	62 2 0	67 9 0	50 2 0	40 11 0	36 4 0
	India . . .	68 2 0	45 5 0	41 9 0	38 6 0	35 8 0
1935	London . . .	59 14 0	54 8 0	46 10 0	33 10 0	29 0 0
	India . . .	61 8 0	42 4 0	39 5 0	35 12 0	35 0 0
1936	London . . .	55 3 0	42 2 0	39 6 0	30 4 0	27 0 0
	India . . .	42 6 0	32 6 0	28 13 0	26 4 0	24 1 0
1937	London . . .	54 5 0	54 10 0	43 3 0	37 9 0	36 7 0
	India . . .	52 11 0	36 4 0	34 2 0	31 15 0	29 14 0
1938	London . . .	47 10 0	49 12 0	44 5 0	33 0 0	28 12 0
	India . . .	45 15 0	31 8 0	29 0 0	25 13 0	22 6 0
Average	London . . .	55 13 0	53 11 0	44 12 0	35 0 0	31 8 0
	India . . .	54 2 0	37 9 0	34 9 0	31 10 0	29 6 0
Margin between London and India.		+ Rs. 1-11	+ Rs. 16-2	+ Rs. 10-3	+ Rs. 3-6	+ Rs. 2-2

A comparison of the price of "Peaberry" between the London and Indian markets shows that in 1934 and 1935 it fetched better price in India than in London. The price margin for "Peaberry" between London and India is generally small. Often, "O" fetches higher price than "Peaberry" in London. The price margin between the lower grades in London is also small.

That London pays a good premium for bold quality coffees is seen from the prices realised for "O" grade in London. The "O" grade exported to London is the cream of Indian coffee and it gets a premium of about Rs. 6 per cwt. over the first grade sold in Mangalore. This would indicate that it is more profitable to export the top grades of Indian coffee to the United

Kingdom. The average prices of "B" and "Triage" in London approximate to those in Mangalore. The slightly higher margin realised for the lower grades in the London market would not apparently compensate for the costs incurred in sending the coffee to London.

E.—Price variations in the same market.

On account of the wide difference in quality particularly in types and grades, the price variations in the same market for the same type and grade are considerable. The following are some of the prices realised in London auction for "O" grades of coffee on a particular day:—

Price of plantation "O" grade.

(In shillings.)

	s.	d.
Naduvattam	100	6
Do.	63	0
Do.	76	0
Cointatore	68	6
Billigirangan	104	0
Coorg	65	0
Bababudan	104	0
Do.	90	0
Mysore	73	0
Do.	65	6
Do.	69	0
Do.	66	0

The price range within the same type for the same grade was about 14 s. per cwt. in the case of two Bababudan coffees and between the various types as much as 41 s. per cwt. These differences are due to the premium commanded by certain special estate marks in the London market.

Prices in India also vary in the same market for the same types and grades. While the best Mysore coffee fetched about Rs. 38 per cwt. in Mangalore, the poorer variety of the same crop was sold during the same period at about Rs. 28 per cwt. In a leading South Indian market, the following prices were quoted for a particular grade of the same coffee by different dealers on the same day.

	Extra hold. (Per cwt.)
	Rs. A. P.
Dealer A	40 0 0
Dealer B	41 0 0
Dealer C	44 8 0
Dealer D	45 0 0

The variations were as much as Rs. 5 per cwt. The price difference in the above case is to some extent accounted for by the credit facilities afforded by the particular dealer and also by the reputation attached to the coffee packed by certain individuals.

F.—Forward delivery prices.

It is estimated that about 10 to 15 per cent of the coffee is sold on forward delivery basis. Future transactions of a purely speculative character would not exceed 500 cwt. a season. The number of delivery months varies from two to four starting from September and extending up to March. The length of time during which the contract remains open prior to the delivery month varies from a few days to about two months. The curers and wholesale distributors make forward contract with planters. "Plantation" coffee is purchased forward on the basis of 7 per cent and cherry 5 per cent "Triage". Some distributors purchase forward the whole crop of certain estates. Appendix XXVII (a) shows a typical contract form which is in use.

Some typical quotations are given below :—

Future and spot price quotations of "Plantation" assortment in Mangalore.

Date.	Delivery period.	Prices per cwt. ex-bags.	Spot prices.	Difference.
		Rs. A. P.	Rs. A. P.	Rs. A. P.
1933.				
December 9th .	December . . .	44 0 0 to 45 0 0	47 0 0 to 48 0 0	—3 0 0
December 9th .	January . . .	41 0 0 to 42 8 0	47 0 0 to 48 0 0	—5 12 0
1934.				
January 9th . .	January . . .	42 2 0	42 2 0 to 42 9 0	—0 4 0
January 13th .	January . . .	42 0 0 to 42 8 0	42 8 0 to 43 11 0	—0 14 0
January 13th .	January/February .	42 0 0	42 8 0 to 43 11 0	—1 2 0
January 20th .	January/February .	43 0 0 to 43 10 0	44 0 0 to 45 0 0	—1 3 0
January 27th .	February . . .	45 0 0	45 0 0 to 46 0 0	—0 8 0
December 22nd .	January . . .	45 8 0 to 46 0 0	50 8 0 to 53 0 0	—6 0 0
	January/February .	43 0 0 to 44 0 0	50 8 0 to 53 0 0	—8 4 0
1935.				
February 11th .	February . . .	44 8 0 to 45 0 0	43 8 0 to 46 0 0	..
March 16th . .	End of March/early April.	41 0 0	40 0 0 to 43 12 0	—0 14 0

Date.	Delivery period.	Prices per cwt. ex-bags.	Spot prices.	Difference.
		Rs. A. P.	Rs. A. P.	Rs. A. P.
1936.				
January 10th	January/March . . .	34 8 0	33 11 0	+ 0 13 0
October 3rd	December and Decem- ber/January.	30 0 0 to 31 0 0	..	.
December 5th	January/March . . .	34 0 0 to 35 0 0	35 0 0 to 36 12 0	- 1 6 0
1937.				
December 31st	January-February/ January-March.	28 0 0 to 29 0 0	29 0 0 to 31 0 0	- 1 8 0
1938.				
January 8th . . .	January/February . . .	29 0 0	28 4 0	+ 0 12 0
January 15th . . .	January/February . . .	30 0 0	29 4 0	+ 0 12 0
January 22nd . . .	January/February . . .	30 0 0	29 8 0	+ 0 8 0

Future delivery prices on the whole maintain a fair degree of sympathy with spot prices. When ready prices are low the future delivery prices are usually at a premium and when ready prices are high the future prices tend to be low. The necessity of covering commitments for February and March delivery usually helps in steadying the spot prices during these two months.

G.—Market intelligence.

The market information available at present for the planters and the trade is very scanty. The small growers are generally ignorant of the condition of the crop, prices, stocks, etc., in the neighbouring markets. The little information that they manage to gather is from the neighbouring producers or assembling agents. The bigger planters are better off in this respect. The sources of information for them on the important items of market conditions in India and abroad are the curers in India and the brokers or commission agents in London. These agencies keep the planters informed from time to time about the prevailing price of Indian coffee in India and foreign countries and the general trend of the market. The merchants and brokers acquaint themselves with the market conditions by personal visits to the growing, curing, assembling and marketing centres. They also keep contact with their agents in the curing and assembling centres. Some big wholesale dealers in Coorg and Mysore obtain information about the market conditions from the agents of the big curing firms in Tellicherry, Calicut and Mangalore. The merchants in Travancore gather the market news from the commission agents at Coimbatore, Virudhunagar and Mangalore. The merchants in Cochin are informed by the dealers in curing centres and the brokers who move about in the State. The smaller buyers get the information from the middlemen and

merchants in the assembling centres. The dissemination of market news takes place through the following channels.

(1) GOVERNMENT PUBLICATIONS.

The method of collection of price data by government authorities has already been dealt with in the previous issues of the Marketing Series. One serious defect of the government publications is that they are published long after the date for which the prices are recorded and, in consequence, are more of historical and academic interest than of practical utility to the trade. The Indian Trade Journal published every Thursday by the Department of Commercial Intelligence and Statistics of the Government of India gives the weekly prices of Nilgiris "Peaberry", Cherry "Peaberry" and "Flats" at Bangalore and of East Indian at London, besides showing the quantity of coffee exported from all British Indian ports to the United Kingdom. France and other countries. Bangalore is neither a curing centre nor is it one of the major distributing centres of coffee in India. The prices in Bangalore are not therefore typical of Indian prices and consequently are of little value. Further, these Bangalore prices are ten days old and the London prices six days old when they reach the public. The market news should be published with greater speed if it is to be of any use to the trade.

The "Indian Coffee Statistics", an annual publication issued by the Department of Commercial Intelligence and Statistics, gives the area and production of coffee in India and of import and export of coffee into and from India. Previously, returns relating to estates or plantations smaller than 10 acres in area were excluded, but from 1931-32 plantations of an area between five and ten acres are also included. Figures relating to the inter-provincial movements of coffee are also published monthly by the department mentioned above in the "Accounts relating to the Inland (Rail and River-borne) Trade of India" and the "Accounts relating to the Coast-ing Trade and Navigation of British India". Similar monthly periodicals are also issued giving the foreign trade of British India and of the maritime States in Kathiawar and the State of Travancore. Figures regarding the area of coffee in the provinces and States are given in the "Agricultural Statistics of India", and estimates of area and production of coffee are given in the "Estimates of area and yield of principal Crops in India", both of which are annual publications. In the United Kingdom, the Intelligence Branch of the Imperial Economic Committee issues "Plantation Crops" giving a summary of figures of area and production in the Empire and foreign countries, Brazilian coffee statistics, exports (with value) and imports of coffee from and into principal producing and importing countries, estimated *per capita* consumption of coffee, prices of coffee in London of some important countries and other useful information. The International Institute of Agriculture at Rome publishes the "International Year Book of Agricultural Statistics" giving information relating to area, production, yield per hectare, imports, exports and prices of coffee in the various countries of the world. Similar information is published in the Statistical Year Book of the League of Nations.

(2) NON-OFFICIAL PUBLICATIONS.

The Curers' Association in Mangalore is the only organised body which issues every week, during the coffee season, market bulletins which are distributed to their clients in different areas. Some of the large curers at Tellicherry, Calicut, Coimbatore, Hunsur and Mysore also issue individual circulars relating to market intelligence. These circulars disseminate market information regarding the price quotations of Indian and Brazilian coffees

in the United Kingdom. They also give spot quotations of the average prices in Mangalore for the week for fair average quality "Assortment", "Peaberry", "A", "B", "C" and "Triage" of coffee in general and also of Mysore and Coorg coffees separately, besides quoting prices of estate pounded cherry and coast cleaned cherry forward prices, short comments on prices and trend, quantity of spot and forward sales on estate account through the curers and fortnightly shipments to the United Kingdom from the ports on the West Coast.

In Mangalore market the produce of different plantations is auctioned separately. A statement is sent by members of the Curers' Association on Friday evening of each week to the Secretary of the Association giving the estimated current market price of f. a. q. "Plantation", "A", "B", "C", "Peaberry" and "Triage" and whole crop estate pounded cherry with 5 per cent "Triage". The Secretary of the Curers' Association works out the mean of the quotations as supplied by members to the nearest 4 annas per cwt. and also the value of a standard "Assortment" on the basis of 50 per cent "A", 25 per cent "B", 8 per cent "C", 10 per cent "Peaberry" and 7 per cent "Triage". The information thus imparted however, leaves much to be desired. In the first place, the averages are quoted for coffee in general without reference to types. When prices of a commodity like coffee are quoted they should have reference to the particular types and grades. In the absence of such details, the utility of such figures remains doubtful. Besides, both Mysore and Coorg coffees make their way to Mangalore and as such the prices of coffee in general would apparently relate to the averages of Mysore and Coorg. In some weeks the average may include a large number of Mysore consignments and only a small proportion of the Coorg and *vice versa*. In either case the influence of the advantage of the higher prices of Mysore or the disadvantage of the lower prices of Coorg would be predominant and to that extent the weekly prices may not be on a strictly comparable basis. This defect could be eliminated by quoting the average of prices for Mysore and Coorg separately.

The Planters' Chronicle, a fortnightly publication of the United Planters' Association of Southern India, quotes the prices of "O", "A", "B", "C", "Peaberry" and "Triage" of Indian coffee in London during the coffee season. Some of the issues of the Planters' Chronicle also give a review of the market position of Indian coffees in Mangalore and Coimbatore and of Indian, Kenya and Costa Rica coffees in London market. The "Market Report and Bulletin" a weekly publication issued by the Mysore Chamber of Commerce quotes the prices per cwt. of Nilgiri "Peaberry", Plantation "Peaberry", Native "Peaberry", Nilgiri "Parchment", Plantation and Native "Flat" in Bangalore market. It has already been pointed out that the methods of compiling the price statistics adopted by the Chambers of Commerce appear to be defective and steps might be taken to make them more useful to the trade.

In February 1938, the Indian Coffee Cess Committee at Bangalore started issuing a monthly bulletin for the use of the coffee industry. The supplement to this bulletin gives a review of the world position, summaries of market reports in Mangalore, Coimbatore, Chikmagalur, Virudhunagar and Kannankurichi, stocks of Indian coffee in the United Kingdom, the receipts at and off-take from the major curing yards at the important centres, monthly distribution of coffee by rail from Mangalore, Tellicherry, Calicut, Feroke and Coimbatore, imports into European countries and the United Kingdom, imports of Indian coffee in the United Kingdom, exports from the important ports and the shipments of coffee from the West Coast.

In the United Kingdom there is no organised body to issue bulletins giving market intelligence regarding coffee. Several of the more important merchant houses issue their own circulars. Among the important non-official publications are the monthly "Coffee Statistics" issued by R. J. Rouse & Co., London, giving arrivals, deliveries, re-exports, stocks, etc., of coffee relating to important world countries besides quoting the prices of Indian, Costa Rica and Santos prices in London. Arbuthnot Latham & Co., Ltd., issue every week a "Produce Report" giving a summary of the prices, stocks, deliveries, etc., in London along with market news relating to tea and rubber. Similar bulletins are issued by Messrs. J. K. Gilliat & Co., Leslie Anderson, Ltd., and Rootham & Co., in London and are distributed to their clients. These circulars deal with coffee of particular origin only. Thus those giving information about Indian coffee may have little or no information relating to Costa Rica with the result that while a grower in Mysore may know how he has fared in London market in comparison with his neighbour, he may not know how his produce has fared in relation to coffee from other parts of the world. To maintain the present position and to gain ground in new markets, fuller information would be required from other countries also.

(3) POSTS, TELEGRAPH AND TELEPHONE, ETC.

The producers and the bigger merchants usually keep themselves in touch with the market conditions in the assembling and distributing centres by frequent correspondence. The use of telegraph is also made for the exchange of market news by the big curers and merchants. Occasionally such information is gathered and disseminated by telephone. In some cases the producers get market information direct from the United Kingdom and Continental markets from their agents and brokers by foreign air mail and cables.

Some of the Madras dailies such as "The Madras Mail," the "Hindu," etc., publish weekly or fortnightly reports about the Mangalore coffee market dealing with such points as the condition and tendencies of the market, spot and forward sales auctions, prices of the different grades, retrospects, stocks, arrivals, demand from different sources, local and foreign, and prices in foreign markets. The "Madras Mail" publishes weekly details regarding coffee in the Special Planting page.

(4) GENERAL.

We have already seen the limitations of official price quotations. In order that the information may be of benefit to the coffee industry, it is necessary that carefully organised and dependable system of market intelligence service giving the following data should be made available :—

Weather and rainfall.—Weather and rainfall conditions.

Acreage forecasts.—Acreage forecasts under different varieties with remarks on increase or decrease.

Crop forecasts.—Periodical reports on the condition of the crop and probable yield in terms of "acres" or "per cent of normal" for *arabica* and *robusta* and the progress of picking, etc.

Arrivals.—Arrivals of *arabica* "Plantation", "Parchment", cherry and *robusta* "Parchment" and cherry in Mangalore, Tellicherry, Calicut, Coimbatore, etc., and progress of curing in the curing yards.

Stocks.—Stock position with regard to *arabica* "Plantation" and cherry and *robusta* "Plantation" and cherry in the important markets.

Exports.—Exports from India of *arabica* “Plantation”, *arabica* cherry and *robusta* and imports of tinned coffee and chicory. These should be given in cwt. by destination and by grades.

Bushel, spot and forward prices.—Bushel, spot and forward prices for recognised grades of different types with the quantity of sales. Information about foreign markets may be collected by types besides giving the prices of competing coffees in foreign markets. Arrangements to broadcast through radio from Madras and Trichinopoly a brief resumé of the salient features of the market both in vernacular and English on fixed days of the week would also be useful.

H.—Burma.

Most of the coffee produced in Burma is *arabica* cherry. A small quantity of “Parchment” coffee is sent to Coimbatore in the Madras Presidency for curing. The following are the prices obtained in Coimbatore for Burma “Plantation” coffee.

Price for “Plantation” assortment.

(Per cwt.)

	Burma coffee sold in Coimbatore.	Coimbatore “Assortment”
	Rs. A. P.	Rs. A. P.
1934-35 March	45 8 0	46 0 0
1935-36 March	31 8 0	33 0 0
1936-37 March	40 0 0	43 0 0

In 1938 Burma did not send any coffee for curing to Coimbatore. The prices realised for Burma coffee in Coimbatore compare favourably with the prices for the average “Assortment” Indian coffee in Mangalore and Coimbatore. But the curing charges, cost of transport and curers’ selling commissions on Burma coffee work out to about Rs. 8-8 per cwt.

Coffee is imported into Burma from India mainly from Coimbatore. Shevaroy and Nilgiri “Assortment” are purchased by the Burmese merchants from Coimbatore and the prices per cwt. f. o. b. Madras during the quinquennium ending 1936 were as follows :—

(Per cwt. f. o. b. Madras.)

	Shevaroy “Assortment”.	Nilgiri “Assortment”.
	Rs. A. P.	Rs. A. P.
1932	67 8 0	..
1933	58 0 0	..
1934	57 0 0	54 0 0
1935	45 0 0	59 0 0
1936	37 0 0	..

Shevaroy and Nilgiri “Assortments” are usually purchased from the Coimbatore curers in February or March of each year. Freight and other handling charges from Coimbatore to Rangoon amount to about Rs. 6-4-0 per cwt. and from Madras to Rangoon about Rs. 4 per cwt.

The following figures give the average monthly curers' prices of Burma cherry "Assortment" at Aungban (Burma) from 1931-32 to 1938-39 :—

Monthly prices of "Cherry" coffee in Burma.

(Per cwt.)

	1931-32.	1932-33.	1933-34.	1934-35.	1935-36.	1936-37.	1937-38.	1938-39.
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
December . . .	57 9 0	50 6 0	34 9 0	20 13 0	23 10 0	16 3 0	25 11 0	19 0 0
January . . .	43 13 0	39 3 0	26 7 0	22 1 0	21 7 0	19 11 0	28 11 0	17 7 0
February . . .	41 11 0	39 3 0	28 5 0	22 11 0	19 14 0	19 14 0	18 0 0	15 2 0
March . . .	44 13 0	39 8 0	28 10 0	23 15 0	19 0 0	22 2 0	22 10 0	14 12 0
Average . . .	47 0 0	42 1 0	29 8 0	22 6 0	21 0 0	19 8 0	23 12 0	16 9 0

The prices of coffee at Aungban have been following more or less the same downward trend as in the case of Indian coffee. Prices in December are usually above the average of the season. They generally go below the average towards the middle and end of the season on account of competition from imported stocks and also on account of larger supplies coming into the market as the season progresses.

The price of Indian "Cherry" coffee in Rangoon is about Rs. 8 per cwt. more than Burma coffee. Burma coffee fetches lower price compared with the price of "Cherry" coffee realised by planters in India as the following table shows :—

	"Cherry" coffee in Mangalore.	Burma "Cherry" coffee.	Difference.
	(Per cwt. in Rupees.)		
	Rs. A. P.	Rs. A. P.	Rs. A. P.
1933-34	38 7 0	29 8 0	8 15 0
1934-35	37 12 0	22 6 0	15 6 0
1935-36	29 15 0	21 0 0	8 15 0
1936-37	32 4 0	23 12 0	8 8 0
1937-38	25 1 0	19 8 0	5 9 0

The average difference between the prices for "Cherry" coffee in India and for Burma "Cherry" coffee in Burma is about Rs. 9 per cwt. This difference is due to the inferior method of preparation followed in Burma.

INTER-CHAPTER THREE.

Coffee has a larger range of quality than many other agricultural products. The quality varies in the same type, variety and season from district to district and from plantation to plantation. Curers in some places do a certain amount of grading on the basis of type, variety, size and appearance of the bean, but the variations in grades and grade designations of such coffee from one merchant to another are considerable. Garbling and regarbling and mixing by dealers during the various stages of distribution destroy any semblance of uniformity in the coffee that comes from the curer. The price quotations are not, therefore, comparable or intelligible to any one except those directly concerned.

Brazil holds the key to world prices. The price of Indian coffee in London was lowest in 1936. In 1937, the world prices moved up slightly due mainly to the decision of the Coffee Congress at Bogota to sustain the price of all American coffee at a level decided by the Brazilian Government. But in November 1937 Brazil announced a reduction of 75 per cent in the export tax on coffee and prices again dropped in 1938. It will be observed that the fall in the price of Brazilian coffee is much sharper than in the case of Indian, Costa Rica and Kenya.

The world price of coffee and the demand in South India are the chief factors that influence the course of prices of Indian coffee. Statistics show that coffee prices, unlike tea and tobacco and most of the other commodities, are well below the average prices of 19th September 1931 inspite of the general increase in prices of other commodities after the War. This is significant as indicating the serious nature of the problem facing coffee producers in the country.

The trend of prices in Tellicherry closely approximates to that of Mangalore. The Mangalore prices are typical of other export markets. They do not, however, represent the prices of those markets which serve the internal markets in India.

Robusta prices have not shown any marked trend as in the case of *arabica* plantation or cherry. As *robusta* is generally not exported, the reaction of world prices is less pronounced than in the case of the other varieties. The fact that the internal Indian market is, to some extent, insulated against the price shocks experienced on the world market is a point of some significance to producers considering a marketing policy.

Prices are generally above the average in January and below the average from April to December. The best season to market Indian coffee in London appears to be from January to April.

The seasonal variation in prices in the London market does not appear to be quite the same as in the export markets in India due perhaps to a certain amount of time-lag. While the prices in India tend to rise in December, they are usually at the lowest in London, and in January when prices improve in the London market, they sag in India. Towards April and May, however, prices drop both in London and the export markets in India, while on the internal markets in India prices generally improve after May and are above the average from June to October. It may be observed, however, that the planters do not benefit from the higher returns realised during June to October on the internal markets as the stocks are practically all out of their hands by the end of May.

The periodicity in monthly prices in the consuming centres approximates, to a certain extent, the price variations in the chief distributing centres in the South. Prices start low but get firm towards the middle of the coffee season, *i.e.* February and March, and in the off-season months, *i.e.*, June to October they show a tendency to rise.

A comparison of the average price of different types of coffee in the chief centres of distribution in South India shows that while Nilgiri leads with a premium over all the other types, Palni brings up the rear, the difference being from Rs. 8 to Rs. 10 per cwt. The price for Coorg coffee is slightly lower than for Mysore. Anaimalai commands better prices than Mysore and Shevaroy sold in Coimbatore gets a better price than Anaimalais. That better methods of preparation pay is proved by the fact that Nilgiri coffee sold in Coimbatore gets a premium of about Rs. 5 per cwt. over that marketed in Mettupalaiyam. For the same reason, Shevaroy coffee sold in Coimbatore fetches about Rs. 2 to Rs. 3 more than that sold in Kannankurchi at the foot of the Shevaroy Hills. With better methods of preparation and marketing and more precise definition of qualities and grades, along with an improved daily market news service, the price margin between the various types of coffees and for the same type of coffee in adjacent markets would be much narrower than at present to the advantage of local producers.

In Mangalore market, "Peaberry" commands the best price and enjoys a premium of about Rs. 15 per cwt. over "A" as the consumers in South India have a partiality for "Peaberry". But the price margin between "Peaberry" and "flats" is getting smaller. The difference in prices between "Peaberry" and "A" dropped from 33.5 per cent in 1933-34 to 21.4 in 1938-39 and between "Peaberry" and "Triage" from 47.9 per cent to 34.5 per cent during the same period. This points to the tendency in the market to substitute inferior grades for superior ones and to a reprehensible but growing demand for "Triage" for use in re-garbling and mixing. Further, the manufacturers who sell ground coffee are going in for cheaper grades and mixtures to make a better margin. This is detrimental to the coffee industry in general and can only be overcome by the recognition and adoption of standard grades for the raw and manufactured products.

Coast cured cherry is of better quality than estate pounded as it is garbled properly and prepared for the market by the curers. Coast cured cherry fetches about Rs. 2 per cwt. more than estate pounded. In 1938-39, the average annual price of coast cured cherry was Rs. 6-2-0 per cwt. less than that of "Plantation" in Mangalore. This is due to the fact that cherry is inferior in quality compared with the "Plantation" crop.

The difference in price between the wholesale and retail markets in India has been growing rapidly and is now very wide. The possibilities of reducing this price margin have to be looked into. The small turnover in coffee in the North and absence of a proper market news service applicable to recognised standard grades of coffee are mainly responsible for the large difference between the wholesale price in the South and retail price in the North.

A comparison of the price of "Peaberry" between the London and Indian markets shows that in 1934 and 1935 it fetched better price in India than in London. London pays a good premium for bold quality coffees. The "O" grade exported to London is the cream of Indian coffee and gets a premium of about Rs. 6 per cwt. over the first grade sold in Mangalore. This would indicate that it is more profitable to export the top grades of Indian coffee to the United Kingdom. The average prices of "B" and "Triage" in London approximate to those in Mangalore and the slightly higher margin realised for the lower grades in the

London market would not apparently compensate for the costs incurred in sending the coffee to London. It would appear indeed that the top grades have to bear part of the cost of transport of the lower grades. More accurate costings on the part of curers and exporters would probably indicate that it would be more profitable to dispose of the lower grades on the internal markets.

The price range within the same type and for the same grade was about 14s. per cwt. in the case of the two Bababudan coffees and between the various types as much as 4ls. per cwt. These differences are due to the premium commanded by certain special estate marks in the London market.

Prices in India also vary in the same market for the same type and grade. While the best Mysore coffee fetched about Rs. 38 per cwt. in Mangalore, poorer types were sold during the same period at about Rs. 28 per cwt.

About 10 to 15 per cent of the coffee is sold on forward delivery basis. The length of time during which the contract remains open varies from a few days to about two months. The curers and wholesale distributors make forward contracts with planters. Future delivery prices on the whole maintain a fair degree of sympathy with ready prices. When ready prices are low the future delivery prices are usually at a premium and when ready prices are high the future prices tend to be low. The necessity of covering commitments for February and March delivery usually helps in steadying the ready prices during these two months.

The market information available at present for the planters and the trade is very scanty. The bigger planters are better off in this respect. The Curers' Association in Mangalore is the only organised body which issues every week, during the coffee season, market bulletins for their clients. In February 1938, the Indian Coffee Cess Committee at Bangalore started issuing a monthly bulletin for the use of the coffee industry. The supplement to this bulletin gives a review of the world position and summaries of market reports of some important markets.

When the prices of a commodity like coffee are quoted they should have reference to the particular types and grades. In the United Kingdom, there is no organised body to issue bulletins giving market intelligence regarding coffee.

The circulars issued by some of the more important merchant houses in the United Kingdom deal with coffee of a particular origin only. Those giving information about Indian coffee may have little or no information relating to Costa Rica with the result that while a grower in Mysore may know how he has fared in comparison with his neighbour, he may not know how his produce has fared in relation to coffee from other parts of the world. To maintain the present position and to gain ground in new markets, fuller information would be required about daily prices and market conditions in other countries also.

In order that the information may be of benefit to the coffee industry, it is necessary that a carefully organised and dependable system of market intelligence service giving the following data should be made available :—

Weather and rainfall, acreage forecasts, crop forecasts, arrivals, stocks, exports, bushel, spot and forward prices. Market news regarding information about foreign markets may be collected by types besides giving the prices of competing coffees in foreign markets. Arrangements to broadcast from Madras and Trichinopoly a brief resumé of the salient features of the market both in Indian languages and English on fixed days of the week would also be useful.

Most of the coffee produced in Burma is *arabica* cherry. A small quantity of "Parchment" coffee is sent to Coimbatore for curing. The average difference between the prices of "Cherry" coffee in India and of Burma "Cherry" coffee in Burma is about Rs. 9 per cwt. This difference is due to the inferior method of preparation followed in Burma.

CHAPTER IV.—PREPARATION FOR MARKET.

A.—General.

The quality of coffee depends to a considerable extent on the manner in which the crop is prepared for the market. Even the best of the crop can be spoiled by crude methods of preparation. In this respect, small holders labour under a greater handicap as they neither have sufficient funds to buy the necessary machinery or provide fermentation vats, etc., nor does their crop reach the big curers who maintain special technical staff to supervise the various operations. The bigger planters carry out the preliminary preparations on the estate and later get the operations completed by the curers.

To understand the various processes adopted in the preparation of coffee it is necessary to know what coffee fruit is. The coffee fruit resembles a cherry in shape, colour and size. The red covering or skin is called the pulp. Below the pulp there is a sweetish mucilaginous substance surrounding two flat sided beans or sometimes a single rounded bean. Beneath this, there are two wrappers, the outer one which is tough is known as "parchment" and the inner one which is thin and closely adhering to the bean is known as "silver skin". The beans are generally of a round oval shape, convex on the outside and flat on the inner side. When one of the two seeds remains unfertilised, the other develops into a round bean filling up the fruit. These beans constitute what is called "Peaberry".

There are in India two methods of preparation—the "dry" (natural) and the "wet" (washed) methods. Under the former method, the coverings on the bean are removed by drying and pounding, while in the case of the latter a series of well-regulated processes consisting of pulping, fermenting, washing, drying and peeling are adopted to obtain the desired result.

The "dry" method is largely followed in Brazil, Salvador and parts of Venezuela and Colombia. The "wet" method is popular in Kenya, Costa Rica, Guatemala, Jamaica and Java. In India, the "dry" method was in vogue in the beginning but later the larger plantations adopted the "wet" method. Coffee prepared by the "wet" method is known as "Plantation" coffee and that by the "dry" method as "Cherry" or "Native". Since in other countries such as Kenya, Uganda and Tanganyika, the term "Native" is used to indicate *robusta* coffee, it is desirable that in India where most of the coffee produced is *arabica*, the term "Cherry" be used so that there may be no chance of mistaking the inferior *robusta* coffee for *arabica*.

B.—Harvesting.

The harvesting season varies in the different areas according to the species of coffee and altitude, rainfall and climate of the localities. The fruits of *arabica* crop develop in seven to eight months and those of *robusta* in nine to eleven months. (See plate facing page 30). The main harvesting season for

arabica crop is from October to March and that of *robusta* from January to April. The following table shows the normal harvesting periods in the areas where *arabica* coffee is grown :—

Producing area	Harvesting period	
	Beginning	End
Nilgiris	October/November	April/May
Shevaroyas	October/November	April
Anaimalais	October	March
Palni	August	February
Billigirirangan	December	April
Naduvattam and Nelliampathis	December	April/May
Coorg	November	March
Mysore	December	April
Travancore	November	March

(1) PICKING FOR "PLANTATION" (PARCHMENT) COFFEE.

Picking for "Plantation" coffee requires great care so that neither unripe nor overripe berries are taken ; but if they are, they should be converted into "Cherry" and not "Parchment" coffee. Unripe berries give a high percentage of "Triage" and overripe berries are difficult to pulp. Moreover, the decomposition of the pulp stains the parchment and produces "foxy", *i.e.*, discoloured coffee. Owing largely to faulty picking it is found that the proportion of "Triage" in the crop of many estates amounts to as much as 15 to 20 per cent.

The number of pickings depends on the number of blossoms. In Mysore, Coorg and Palni where the crop is practically from one blossom, about three rounds of picking with a last round of "gleaning"* complete the crop. On the higher elevations, however, where there are several blossoms, as many as twelve rounds are often necessary to gather the whole crop.

As the berries turn red, "fly" picking† starts and a few coolies go round the red patches and collect ripe berries (see plate facing page 122). Later, when most of the crop is fully ripe, picking is done systematically over the whole plantation.

It is difficult to estimate the crop gathered during each picking as the quantity varies from district to district and from one estate to another. But the usual proportion obtained at each picking may be estimated as under :—

Picking	(Per cent)
First	5 to 10
Second and third	70 to 80
Fourth	10 to 15
Last	5 to 10

* Gleanings" are the berries collected from the ground finally.

† "Fly" picking is the first pick of the season.

From the point of view of quantity and quality, the middle pickings bring in the best part of the crop. In the last pick, both ripe and unripe berries are stripped off the branches. This is followed by "gleanings". As the "strip-pings" and "gleanings" contain beans of different stages of maturity, the planters usually convert them into "Cherry" along with a portion of the first picking. Some estates, however, convert almost the entire crop into "Parchment" so that a good quantity of poor and indifferent quality coffee which should be converted into "Cherry" is prepared as "Parchment". Enquiries in the course of the survey indicated that the following proportion of the crop was usually converted into "Parchment" in the estates which prepared their coffee in this form.

Producing areas	(Per cent)
Nilgiris	90
Anaimalais	90
Shevaroy's	85
Palni	85
Coorg	80
Billigirirangan	95
Mysore	80
High Range	98
Nelliampathis	80

A more discriminate separation of the crop into "Parchment" and "Cherry" would improve the quality of both the varieties.

When the price of "Plantation" coffee is high, or when there is a partial failure of crop and forward contracts have to be covered, the planters are tempted to convert almost the entire crop into "Parchment." To disregard quality in this way is a mistaken policy.

The pickings of the day are collected in boxes. Coolies pick from two to seven boxes a day, depending on the gradient of the estate and the density of the crop. The size of the boxes varies from district to district from $\frac{1}{2}$ to $1\frac{1}{2}$ bushels a box.

The rates for picking vary from estate to estate and from season to season. While in some estates, excepting the first pick, the rest is done on contract basis, in others the entire picking is done on daily wages. On estates where the ground is steep, the quantity picked is necessarily small and the rates paid are therefore comparatively higher. The average cost of picking works out as under in the different areas:—

Producing area	Average cost of picking (Per cwt.)		
	Rs.	A.	P.
Mysore and Coorg	2	4	0
Nilgiris	3	0	0
Shevaroy's, Anaimalais, Nelliampathis and Kannan Devan	2	8	0
Palni	2	0	0

In the smaller plantations, the cost of picking works out to only about Rs. 1-8-0 per cwt. as the picking is hurriedly completed in a few rounds without much attention being paid to the picking of ripe berries only.

N.B.—"Strippings" are the berries that are stripped from the branches at the end of the season.



PULPING PROCESS.

*[By courtesy of the Department
of Agriculture, Mysore State].*



PULPING HOUSE AND FERMENTING.

*[By courtesy of the Department
of Agriculture, Mysore State].*



DYING AND PACKING "PARCHMENT" COFFEE ON THE ESTATE.

*[By courtesy of the Department
of Agriculture, Mysore State].*



DYING.



WASHING.

(2) PICKING FOR "CHERRY" COFFEE.

As already stated, the "strippings" and "gleanings" are converted into "Cherry". The main difference between picking for "Parchment" and for "Cherry" is that while for the former only fully ripe fruits are picked individually, for the latter the berries are stripped from the branches ripe, over-ripe and green all together. Estates which convert the entire crop into "Cherry" do not start picking till the greater part of the crop is fully ripe so that the green fruits may get a chance to mature in the process of drying. The cost of picking for "Cherry" coffee which varies considerably from estate to estate ranges from As. 6 to Rs. 2-8 per cwt.

C.—Preparation of "Plantation" (parchment) coffee.

(1) PULPING.

Pulping is the process adopted for the removal of the outer covering of the fruit (see plate facing page 144). The coolies bring the crop to the pulping house where it is measured in boxes. Some planters leave the coffee over till the morning and others pulp it without any delay. If the crop is insufficient for the pulper, it is left to accumulate for two or three days. Un-ripe and overripe berries, stones, twigs, etc., are removed by the coolies from the heap (see plate facing page 122). The crop from old trees which is said to give a coarse liquor and uneven roast should also be kept separate. The smaller estates do not pay sufficient attention to this work with the result that their "Parchment" coffee is of poor quality. The platform on which the berries are heaped after measuring has an aperture a foot in diameter directly above a water channel which carries the berries to the hopper of the pulper.

Disc pulpers are the most commonly used for pulping. Some estates, however, use cylindrical pulpers. The disc machine consists of one, two, three or four iron discs according to the capacity desired. The discs are covered with punched copper plates on both sides and they turn between steel chops. Pulping is done in the spaces between the disc and the "chop" or "plough piece" by the rubbing action of the punched copper plates. The lateral bars are set close enough to the disc to stop the beans from falling through. The pulp is dragged down and thrown out at the back of the pulper. The distance between the bars and the copper sheets can be adjusted to allow of any clearance that may be required according to the size and shape of the beans under treatment. A disc pulper worked by hand pulps about 15 bushels of coffee per hour, while double and triple pulpers, worked by power, turn out about 100 bushels per hour.

The cylindrical pulper consists of a rotary cylinder covered with punched copper sheets. The pulping is done between the cylinder and the doors of the breast by the rubbing action of the punched copper cover. The capacity of a cylindrical pulper varies from about 100 to 1,000 bushels in a day of 8 hours.

The pulping machine has to be set carefully to avoid the beans getting bruised, nipped or crushed. The quality of the outturn depends greatly on the care taken in pulping. When there is a bumper crop, however, sufficient attention may not be paid to the size of the beans put into the machine. This results in increased "Triage."

Before the introduction of the pulping machines, the berries were pulped by cattle treading in estates on Palni, Sirumalai, etc., but this practice has long ceased to exist. Smaller planters who cannot afford to possess a pulpe

either get their coffee pulped in the nearest estate or sell the crop to assembling agents who get it pulped on payment of fixed charges. This practice is very common in Palni, Sirumalai and Wynaad, where there is comparatively a large number of small holdings.

In the chief coffee producing countries like Costa Rica, Kenya, Colombia and Brazil, pulping is done in the same manner as in India. While the disc pulper is generally used in Netherlands Indies and Mexico, the cylindrical pulper is more popular in other countries as it has a quicker turnover. In Brazil and Nicaragua, the cylindrical machines are usually fitted with rubber breasts instead of steel ribs.

(2) FERMENTATION AND WASHING.

The pulper removes the outer covering but the beans remain coated with mucilaginous matter. This is removed by washing the beans after the saccharine matter has undergone a certain amount of fermentation. The pulped beans are carried by water into a fermenting vat from which the water is drained out (see plate facing page 144). In most of the plantations, the pulped coffee piled in vats is covered with gunnies and mats and left from 12 to 36 hours for fermentation. At higher elevations, about 40 hours are sometimes required for proper fermentation. Under-water fermentation is not very popular in India but in some plantations it is practised. Cemented vats with a water-proof dressing are used for under-water fermentation. The water used is first filtered by being run over sand and charcoal so that the stale smell which is usually found in tank stored water may be eliminated. In some estates, a barrel or two of the washed water is poured over the pulped coffee in the fermenting vats. It is believed that this water contains fermenting bacteria which speed up the process of fermentation. This practice might be usefully adopted generally. Some research work also seems desirable on the nature of the organism concerned.

Fermentation softens the gummy covering over the parchment and the beans are then thoroughly tramped and water is let into the vats. The beans are stirred and raked with big wooden spoons and are finally washed. Some estates wash the beans three times to remove all traces of mucilage. Light parchment and pieces of pulp residue float on the surface. The parchment is skimmed off in baskets and dried separately.

The advantages or otherwise of the method of under-water fermentation have been engaging the attention of the coffee industry. Dr. Martin Case, Biochemist of the Kenya Coffee Board, treated some samples of coffee by different methods and under varying conditions and submitted the results for report to three independent liquorers. Coffee fermented dry, in the sun and under shade, and coffee fermented under water, were first tried. In each case, coffee was fermented for a normal period, and for 12 hours, 18 hours and 30 hours over normal and each set was dried in the sun and shade. The following were the comments on the results :—

“The all-round superiority of the water-fermented samples is evident while the only other notable feature is that the so-called ‘normal’ fermentation definitely does not give such good results as a period of ‘over-fermentation’. It is noticed that the shade-dried coffee consistently obtains higher marks for raw appearance, particularly as regards intensity of colour, but against this is to be set the fact that in the case of six of the shade-dried samples the liquorers remarked upon a brownish tinge, whereas this applied to only one

THE "SWIRL" OR "WHIRLPOOL" SYSTEM OF GRADING COFFEE IN VOGUE
IN KENYA.

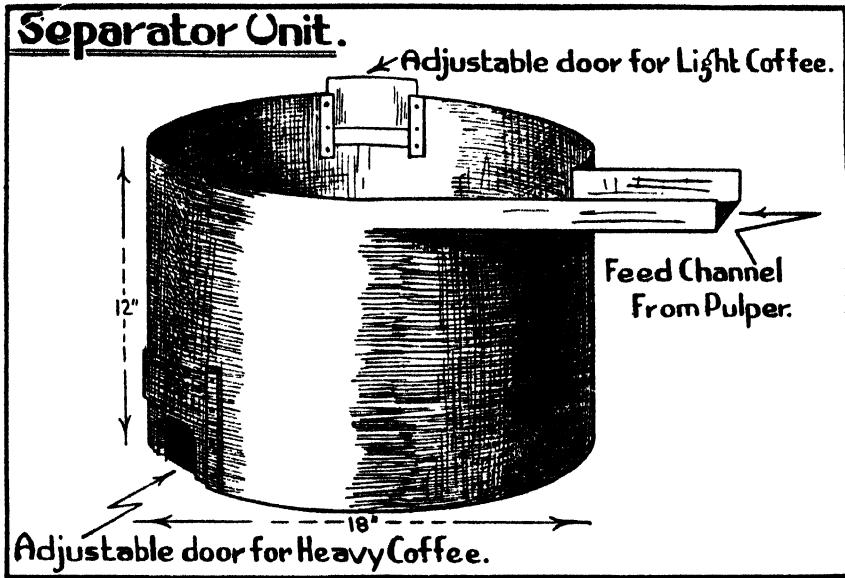


FIG. 1.

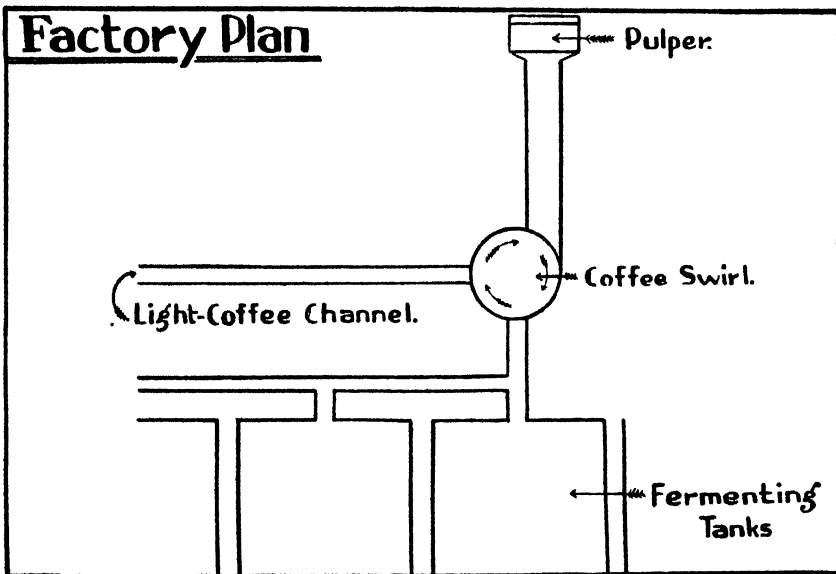
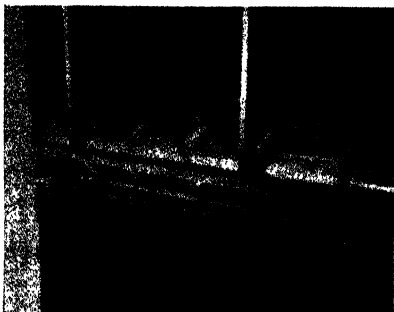


FIG. 2.

Facing page 147.]



SIZER GAUGE.



COFFEE PEELER.



WHOLESALE ROASTING.

of the sun-dried coffees. The improvement in the roasts of the water-fermented samples is very marked, all are classified as 'bright' and all but one obtain maximum points of evenness."

An estate in North Mysore which is noted for the acidity of its coffee has been practising the under-water fermentation method for some years. The same was tried on a Coorg estate but it did not give much difference in the cup. The "silver skin" was, however, somewhat looser and the raw bean showed slightly brighter colour. Further research work is indicated for determining its superiority or otherwise.

Fermentation has obviously an important bearing on quality but it is perhaps not appreciated that the method of washing can also influence quality by sorting out automatically mature beans of heavy specific gravity from light beans which spoil the roast. The 19th report of the Imperial Economic Committee, for example, commended the method of gravity grading in washing channels which serves to separate lighter beans from the top grades. One of the serious defects of the Indian coffee pointed out by the London trade is the large proportion of the "pales"* in the roast. In Costa Rica, the "pale" beans are separated from the top classes by the "channel" system of washing. A description of the channel washing method in Costa Rica is given in Appendix XXV. But channel washing which requires a continuous and plentiful water supply cannot be adopted in many estates in India for lack of adequate water facilities. The "swirl" or "whirlpool" system of washing and grading coffee can, however, be adopted (see diagrams facing page 146). This system is popular in Kenya on estates which do not have sufficient water for the "channel" system. A cylindrical tin called "separator" is fixed in the channel through which pulped coffee passes into the fermenting tanks. The water from the pulper strikes the tin at a tangent so that a swirl or whirlpool is formed in the separator. The lighter beans floating on the surface rotate towards the side of the "separator" on account of the centrifugal force and are side-tracked through an adjustable door to a fermenting tank. Fig. 2 shows the position of the "separator" in relation to the pulper and fermenting tanks. The "separator" can also be used after the coffee has been washed by placing it in a position to receive the washed parchment. This method is probably preferable in India.

The fermentation and washing methods followed in Costa Rica, Colombia, Kenya, Jamaica and Brazil are almost identical. In these countries, the washing machines consist of cylindrical tubs having a spindle fitted with a number of stirrers which rotate, stir and lift the coffee. In Jamaica, the lighter beans are carefully taken out in the process of washing and this process is repeated until the water keeps clean and all the light beans are floated. In Costa Rica, as mentioned before, gravity grading is carried out in the washing channels after fermentation. The beans are classified into three grades according to weight, the lightest being in the lowest section of the channel. In Java, *robusta* coffee is kept in vats for a fixed number of hours without reference to the stage of fermentation. Sometimes sulphate of ammonia is added to speed up fermentation. *Arabica* is usually fermented under water. The washed coffee is drained on perforated iron sheets for a few hours before being taken to the drying house.

(3) DRYING.

Drying is an important step in the preparation of coffee for the market. Moist "Parchment" coffee contains about 55 per cent of water, which has to be

* "Pales" are either light or dead beans, which have an orange colour when broken.

evaporated by drying. The crop from the bigger plantations is dried twice—once on the estates and a second time in the curing works. The small holders, however, who generally pay little attention to this process dry their coffee only once. The temperature in the first stage of drying exercises considerable influence on the final quality of the bean. Rapid drying at a high temperature results in the splitting of parchment and the complete removal of the silver skin, so that when the beans are peeled they get a blue-green colour. The flavour of such coffee is considered to be inferior to that which is slowly dried in the sun.

The beans which are in parchment form are spread out about two to three inches thick on the drying yards or barbacues (see plate facing page 145). The barbacues are constructed usually in the open with cement and bricks. In some estates, wooden or bamboo platforms are used for drying coffee. These *pandals* are usually a foot and a half high from the ground, with coir matting spread on the top. Coffee dries more quickly on coir mats than on cement floors. The practice of surfacing the drying ground with cow-dung, which is common in Mysore, appears to impart an unpleasant odour and the coffee is thereby discoloured to some extent. This should be remedied. In fair weather, about six to eight days are required for sun-drying. At night, the coffee is heaped and covered with mats and gunnies. "Green" beans which cause "pales" and "quakers" in the roast can be picked out while the coffee is on the drying platform. This practice should be more general. The "green" beans can also be identified if the wet parchment is spread out. It is desirable to remove defective beans at all stages of preparation. The small holders as a rule and some of the big planters do not pay sufficient attention to this aspect of preparation. During the drying process, coffee is, or should be, turned over at frequent intervals by means of a wooden spoon or shovel to avoid the beans getting spotted and discoloured (see plate facing page 145).

Planters in districts like Mysore and parts of Nilgiris, Salem and Madurai, which get comparatively heavy rainfall in October, November and December, experience great difficulty in drying their coffee down to the proper limits. It is not uncommon for the curers on the coast and in Coimbatore to receive "Parchment" coffee weighing 40 to 45 lb. per bushel. This naturally affects the quality of the final outturn. Continuous and even drying are necessary to get quality outturn. "Parchment" coffee should be dried down to an average weight of 35 lb. per bushel.

An artificial drier has been installed at the coffee works in Shevaroy. but it is used only during the rainy months. It has two compartments with a capacity of 50 bushels each and requires about 2 tons of fuel for 24 hours. Coffee is slowly rolled in a cylinder into which a current of hot air is driven through a pipe. Within about 24 hours coffee is dried to the required degree. Artificial drying, on account of its comparative quickness, is said to give a better colour to coffee than slow sun-drying.

In Brazil, heat and humidified air are used to dry coffee and it is claimed that this process helps to ripen beans which are not fully matured and also to kill the bean-borer *stephanoderes*. In Ceylon, many estates have mechanically worked driers. In Java, the washed coffee, after being drained on perforated iron sheets, goes into the drying house. Large pipes distribute heat from a furnace under the floor. Drying of coffee at about 170°F. in a well-ventilated drying house is said to give a yellow colour to the beans, while drying at 120°F. with little ventilation imparts a blue colour.

(4) CURING.

Curing involves (a) drying, (b) peeling, (c) grading and (d) garbling, and efficient curing is a major factor in the preparation of coffee for the market. A list of the chief curing works is given in Appendix XXVI.

About 220,000 cwt. of coffee is cured in Mangalore, Tellicherry, Calicut, Coimbatore, Hunsur and Mysore. Minor curing centres are located at Mettupalaiyam, Dindigul, Virudhunagar, Kannankurchi and Chikmagalur and about 50,000 cwt. of coffee is handled in these centres.

Coffee packed in gunny bags (see plates facing pages 145 and 209) is sent down to the curing works either in bullock carts or motor lorries and in some cases on ponies and donkeys. Lorries are, however, fast replacing other forms of transport. Bullock carts usually take 7 to 10 days to reach the curing yards. The slow drying of coffee in transit in bullock carts appears to give a better colour to the beans and to help in maturing those that are not fully ripe. This aspect of the problem deserves to be further examined.

"Plantation" coffee is sent down in parchment form from the estates. On its receipt at the curing yard, it is measured and the weight of a few bushels is taken. Receipts are issued to the estates concerned with details of excess or shortage as compared with the particulars of the way bill. An identification card is attached to each lot, showing the name of the estate, date of arrival, number of bushels and average weight per bushel.

(a) *Drying*.—The coffee, as it is measured, is spread out on the barbaques to the thickness of about an inch. Coffee spread thickly is not evenly dried and leaves the silver skin coating on the beans. On the other hand, if it is spread too thin, it results in excessive driage and the breaking of the beans into bits when peeling. To obtain even and uniform driage, coffee on the barbaques is continuously raked and stirred. A pointer* employed to test driage bites the bean to find out the moisture content. The bean turns white at the bitten end if it is insufficiently dried. It requires a person of considerable practical experience to test driage and determine the optimum point at which drying should stop.

It would not be correct to generalise on the time taken for drying. Other conditions being the same, coffee weighing about 35 lb. per bushel would take approximately 12 hours for drying. Heavy coffee requires more time as it ordinarily contains more moisture. The average loss in weight is about 5 to 6 lb. a bushel.

A trial outturn is prepared for each lot. Two bushels taken at random from each lot are weighed, spread out on the barbaque, dried, pounded and re-weighed. This is done to get an initial idea of the ultimate outturn and to keep a check on the final figures. Further, the identification card referred to earlier is prominently displayed on each lot right up to the final stage, so as to eliminate any chance of a mix-up between one estate and another.

(b) *Peeling*.—Coffee is not peeled immediately after drying. It is left overnight in the bag for cooling. The dried "Parchment" coffee is thereafter peeled by the "Edge-runner" to separate the parchment husk from the bean (see plate facing page 147).

The "Edge-runner" consists of a circular trough about 2½ feet deep and 2 feet in diameter in which lie two fluted iron wheels with an iron spreader fitting closely behind them and mechanically operated by steam or oil engine

* A pointer is an experienced hand employed to test the driage of coffee.

or electricity. The bottom of the trough is also fluted. A small clearance is provided between the edge of the wheel and the bottom of the trough for the "Parchment" coffee to squeeze and roll about. A peeler of the above dimensions takes in a charge of 18 to 21 bushels at a time.

Dried "Parchment" coffee is emptied into a container, fitted to the upper portion of the trough, through a coarse sieve to catch sticks, stones, and other refuse. When a lever is raised, coffee passes down into the trough and is subjected to a rolling and rubbing motion when the fluted wheels turn round and round. The "spreader" moves on the track of the wheels and spreads out the coffee evenly. The time required to rub off the husk from the coffee varies with different lots but normally it takes about 12 minutes. Through small doors at the bottom, the condition of the coffee is observed from time to time. When the husk is fully peeled off, a portion of the bottom of the trough is opened to allow husk and coffee to be drained into another container. An elevator lifts up both husk and coffee and a powerful current of air is passed through to blow the husk into a separate chamber. Coffee drops down into the receiver, and is again elevated and passed through the winnower.

(c) *Grading*.—The beans which are now clean after the removal of the outer skin, pulp, parchment and silver skin are graded and hand-sorted by garblers. Grading is done by passing the beans across a number of sieves fitted cylindrically or horizontally with meshes of different sizes. In Mangalore, Tellicherry, Hunsur and Mysore, the Sizer Gauges classify the coffee into four grades, viz., "A", "B", "C" and "Peaberry". Calicut and Coimbatore have five grades, viz., "O", "A", "B", "C" and "Peaberry". Some sizers are designed to sort out the first and second "Peaberry" and "Elephant" sizes. Graded coffee coming out of the machine is collected in different bags and passed on to the hand sorters. The variations in gauges, etc., are dealt with in detail in the chapter on Classification, grading and standardisation.

(d) *Garbling*.—Garbling is the last stage in coffee curing. Foxy, flowery, black spotted, pale, defectively shaped and broken beans are picked out by hand from the different grades. Beans which do not belong to that particular grade are also removed. The defective beans thus picked out are classed as "Triage" (see plate facing page 180).

Garbling is usually done by experienced women under the supervision of an expert in charge of the curing works. In a good season, and in the case of estates which bestow proper attention at all the stages of preparation, garbling tends to be easy, but when planters try to prepare parchment out of the last pickings it becomes a difficult and costly operation.

An outturn form is then prepared by the curer showing number of bags of "Peaberry", "O", "A", "B", "C", "Triage", "Blacks and Bits" and the total weight of each grade (some curers show the percentage of each grade). This is tallied with the trial outturn. A copy of the outturn form is then made out and posted to the estates concerned.

In places like Virudhunagar, Dindigul and Mettupalaiyam, curing consists only of drying and peeling "Parchment" coffee. In Virudhunagar, a sizing machine for grading has been recently installed. It was observed that in these centres coffee is often insufficiently dried so that clean coffee might weigh more. Peeling in many cases is done in rice hullers. As the rice hullers generate more heat than the peelers, the colour of the coffee changes, the silver skin is entirely removed, and the beans look like polished coffee. The breakage in rice hullers is about 1 per cent. When the quantity is small, the parchment is sometimes peeled in wood or clay mortars (see plate facing page 180). This method of peeling results in increased breakage, i.e., about 2 per cent.

D.—Preparation of “Cherry” coffee.

(1) DRYING AND PULPING.

“Cherry” coffee is prepared by the “dry” method which has an advantage over the “wet” process in so far as it enables beans in the different stages of ripeness to be handled at the same time. The berries should be spread out for two to three weeks on barbecues or on *pandals* covered with coir matting and should be raked over several times a day to get an even driage. Actually, however, “Cherry” coffee is often unevenly dried as less attention is paid to it. Some small growers use a wood or clay mortar and pestle for hulling the cherry, but most of them sell it before hulling to agents who get it hulled in adjoining village rice mills. It is a common practice in Travancore to boil the cherry and then dry it in the sun before husking. Coffee prepared in this way, however, fetches a lower price as it is considered poorer in quality than normally prepared cherry.

(2) CURING.

Cherry received from the plantations is measured and spread out on the barbecues in the same manner as “Plantation” coffee. The curers prepare about 50,000 cwt. of cherry every season. Cherry which is often received with a weight of 40 lb. per bushel is dried down to a weight of 25 to 30 lb. per bushel. It takes about 50 hours to dry the cherry properly. A “pointer” tests the driage and when the berry is sufficiently brittle it is gathered and put in bags.

The two processes of pulping and peeling adopted in the case of “Plantation” coffee are merged into a single process of hulling in the case of cherry. The husk or dried pulp is separated from the bean in about 20 minutes. The dried pulp may be used as fuel or sold to dealers for shipping to Persian Gulf, Travancore and Cochin States, where it is used for mixing with coffee. The husk is blown into a separate chamber and coffee passes through an elevator into the sizing machine, which classifies the beans into “Pea-berry”, “A”, “B”, and “C”.

“Cherry” coffee is garbled in the same way as “plantation”. In Mettupalaiyam, Virudhunagar, Dindigul, Kannankurchi and Chikmagalur, “Cherry” coffee is not treated as carefully as by the curers in Mangalore and Coimbatore and very often insufficiently dried cherry is hulled in peelers or rice mills.

E.—Monsooning coffee.

Some curers and shippers prepare “monsooned” coffee out of cherry for purposes of export. The process of monsooning is confined to Mangalore. It starts with the first break of monsoon late in May or early in June. Cherry is spread on cement or brick floor, about 4 to 6 inches thick, in well-ventilated and airy godowns and raked thrice a day. This process is repeated for about four or five days. It is then packed loose in gunny bags which are stitched and stacked in piles of four to six with sufficient space between each row to allow the monsoon winds to blow continuously on each bag. Once a week, the bags are opened and the contents are bulked and repacked to avoid the beans getting mouldy. In some cases, the beans are poured from one bag to another so that coffee may be evenly monsooned. Particular care is taken to see that the floor is not damp. If it shows signs of dampness, wooden planks or coconut husk is spread underneath the bags. In about one and a half month, the beans get fully monsooned when they assume a silvery white colour and increase in weight from 4 to 7 per cent due to the absorption of moisture. The gain in

weight is lost in about 3 months of the dry weather which follow the monsoon. "Monsooned" coffee stored after November is liable to be attacked by vermin or weevil and shippers usually use Carbonalium-Sulphuralium rectifier fumes for fumigating the stocks.

After the monsoon, some of the shippers resort to artificial monsooning to meet the extra demand for "monsooned" coffee. Water is sprayed on cherry spread about 6 inches thick on cement or brick floor. It is frequently raked and the process is repeated for a week. About 4,000 cwt. of artificially "monsooned" coffee is exported every year. These shipments undermine the reputation of genuine "monsooned" coffee and it is in the interests of the coffee industry to discourage its continuance.

"Monsooned" coffee is sized into "AA", "Basanally" and "Triage". The 1st size "AA" approximates to the "O" size of "Plantation". The second size called "Basanally" is a mixture of small "A", "B", and "C".

The cost of bulking, spreading, filling, weighing and stacking "monsooned" coffee is about an anna per cwt. and the cost of garbling about As. 6 per cwt.

F.—Polishing and colouring.

(1) EXTENT.

Polishing of coffee was unknown in India till 1931, when it was first started in Coimbatore. Later, it spread to Mangalore, Virudhunagar and other distributing centres. The practice of colouring coffee started in 1933.

The curers in Coimbatore, Hunsur and Mysore have polishing machines. In other centres, curers do not do any polishing. The commission agents and some of the wholesale dealers in Virudhunagar, Dindigul, Mettupalaiyam, Salem and Mangalore do most of the polishing. In all, about 60,000 cwt. of "Cherry" coffee is polished every season.

Colouring is done mostly in Virudhunagar, Tuticorin, Mangalore and Mysore State. Every season, about 23,000 cwt. of coffee is coloured in Virudhunagar, 5,000 cwt. in Mangalore and about 10,000 cwt. in Mysore State.

Although the trade in the South cannot be deceived by coloured coffee as it can easily make it out, the consumers who are particular about the natural blue colour of "Plantation" coffee, and the merchants in Northern India who can scarcely make out the difference between natural and coloured coffee are taken in. A good number of samples drawn from markets in Northern India were found to be coloured. In view of the expanding market for coffee in India, it is desirable to stop this practice. The tentative grade specifications for raw beans which were discussed with the trade at the Coffee Conference held at Bangalore in July 1938, provide that coffee graded under AGMARK shall not contain coloured coffee.

(2) METHOD.

Polishing is the act of removing the silver skin from the beans to improve the appearance and to make inferior crop look like good "Plantation" coffee. Polishing is done in a machine with a phosphor-bronze worm which, by rubbing the beans against one another and gradually increasing the pressure, removes all the silver skin and gives the beans a uniform bluish-green appearance. The machines take a charge of about 3 cwt. at a time. Owing to the

pressure used in rubbing, some oil is impressed on the surface of the beans which get an oily smell after polishing. The polished beans are liable to quicker deterioration than unpolished ones, and do not retain their bright colour for more than two months. After that period the colour fades and the beans get patchy. The loss in weight in polishing is about $\frac{1}{2}$ to 1 per cent in *arabica* and 2 to 3 per cent in *robusta* which contains more silver skin. Investigations showed that a fifty per cent mixture of polished cherry in "Plantation" coffee would pass unnoticed.

After polishing, about 3 to 4 bottles of water is sprayed on the beans and a rotator, which has a fan inside it, is worked for about five minutes. When coffee is sufficiently moist for colour to stick, two teaspoonfuls of dark blue powder dissolved in $2\frac{1}{2}$ measures of water are sprayed and the container is turned about for 5 minutes. Two teaspoonfuls each of green, blue and black powder are then sprayed and the machine is worked for another 10 minutes. The beans are then taken out and spread on the floor for about 5 minutes before being bagged. In all, it takes from 20 to 30 minutes for polishing and colouring a charge of 3 cwt. of coffee.

Various colours are mixed to get the correct shade. In Virudhunagar the following proportion is used for colouring 3 cwt. of coffee :—

	Teaspoonfuls.
Dark blue	2
Yellow	1
White	$\frac{1}{2}$
Black	$\frac{1}{4}$

The above mixture is said to give the right bluish-green shade. Coloured coffee gains in weight by one to two per cent.

On analysis, the colouring substance generally used by the trade was found to contain poisonous matter. The composition of the different samples was as under :—

- (i) A wax of Ozokenite origin probably ceresin, a hydrocarbon of high molecular weight with traces of resin—creamy white powder.
- (ii) Graphite mixed with some iron and manganese oxide—greyish black powder.
- (iii) Prussian blue mixed with graphite—blue powder.
- (iv) Prussian blue mixed with a slight quantity of graphite—dark blue powder.

It was, however, noticed that none of these poisonous matters is extracted by water in the preparation of the coffee decoction. In the process of roasting, the deleterious effect of the poison disappears.

The polishing and colouring machines generally used are manufactured in Germany. A polishing machine costs about Rs. 2,000 and a colouring machine about Rs. 3,600. The colours are also imported from Germany.

"The Governments of Mysore and Madras have prohibited the sale of coloured coffee in their respective jurisdictions. The Madras Government, under the notification issued on 5th March, 1940, enacted that coffee whether sold or prepared for sale as green, raw or unroasted coffee or as roasted coffee, shall be free from any artificial colouring matter and free from any coating, facing or glazing substances."

On 18th October 1939, the Government of Mysore issued a Rule stating that coffee shall be free from any artificial colouring matter and from any coating, facing or glazing substances."

The above legislation would effectively stop the practice of colouring which has adversely affected the sale of quality coffees in India for the last so many years.

(3) LEGISLATION IN FOREIGN COUNTRIES.

In the United States of America, United Kingdom and some European countries, colouring is prohibited by law. But in countries like Finland and the Union of South Africa, it is understood, that colouring of coffee is permitted. The relevant rules and regulations are mentioned below :—

United States of America.—The importation of green coffee coated with lead chromate prussian blue and other substances is prohibited.

United Kingdom.—Alteration in the natural tint of any food by the application of stains to the exterior is prohibited.

France.—It is prohibited to hold in stock, sell or re-sell under the name of coffee, any product other than the grain of the coffee plant which has not been subjected to any treatment other than roasting.

Yugoslavia.—It is prohibited to sell raw coffee beans coloured with any kind of colouring matter.

(4) COST OF POLISHING AND COLOURING.

The polishing charges in Mangalore, Coimbatore and Virudhunagar are 6 annas per cwt. and in Mettupalaiyam $4\frac{1}{2}$ annas per cwt. The colouring charges in Mangalore and Virudhunagar are 6 annas per cwt.

About Rs. 3,500 worth of colour is purchased every season in Virudhunagar and about Rs. 700 worth in Mangalore. About 8 annas worth of colour is used for colouring $3\frac{1}{2}$ cwt. of coffee and about 5 units of electric current are consumed in the process.

G.—Methods of packing.

The methods of packing do not vary much in the different areas. While a few estates pack "Parchment" coffee in second hand double gunny bags, others pack both "Parchment" and cherry in single bags. Three bushels are measured and put into each gunny bag which is stitched and sealed at one end with wax. The average weight of an empty bag is about 2 lb. and each bag lasts about 2 to 3 years. In some estates in Nelliampathi Hills, the inner bag used for packing "Parchment" is made of cotton drill to prevent pilfering by the cartmen on the way to the curing firms. Two bushels of "Parchment" or cherry are filled in one cotton bag which is tied by means of twine and then sealed. The mouth of the outer bag is folded over it from either side and the two triangular flaps are again folded on and stitched to the bag. The seal of the estate is then fixed with wax at the stitched end. This is done to avoid theft. The cotton bags last five to six years.

Second hand bags used by the small holders often give a pungent smell due to their having been used previously to pack commodities like ginger etc. Coffee acquires the odour of these articles and it is therefore desirable to use clean bags which do not smell.

The methods of packing and marking for export and internal trade are explained in detail in the chapter on Handling and transportation.

H.—Cost of preparation.

The cost of preparation for market consists of expenses incurred on picking, pulping, fermenting, washing, drying and curing. Except for picking the cost on other operations does not vary much in the case of bigger plantations. They have their own pulping machines and the cost of fermenting, washing and drying is almost the same in the different areas. The crop from the bigger plantations is invariably cured by the curers who are signatories to the West Coast Curers' Agreement and the curing charges are, therefore, uniform. In the case of small planters, however, the expenses vary from estate to estate as indicated in the following table :—

Average cost of preparation of "Parchment" coffee.

(Per cwt. of clean coffee).

Big plantations				Small plantations		
	Coffee prepared by curers	Nilgiri coffee in Mettupalaiyam	Shevaroy coffee in Kannankurichi	Palni coffee in		Mysore coffee in Chikmagalur
				Virudhunagar	Dindigul	
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
Pulping . . .	0 4 0	0 8 0	0 7 0	0 9 0	0 11 0	0 8 0
Fermenting, washing, drying and bagging	0 10 0	0 3 0	0 3 0	0 3 0	0 3 0	0 3 0
*Curing . . .	1 14 0	1 4 0	1 0 0	0 12 6	0 14 0	1 0 0
Total . . .	2 12 0	1 15 0	1 10 0	1 8 6	1 12 0	1 11 0

The smaller planters do not have pulping machines and have to get their coffee pulped at the nearest pulper. The charges for pulping vary from one area to another. The cost of fermenting, washing and drying is less in the case of the smaller planters as these operations are carried out by them in a very superficial manner. The cost of curing is not uniform as the curers who handle the small planter's crop in the different areas charge different rates.

The cost of drying and pulping "Cherry" coffee in the estate amounts to about Re. 1 per cwt. in the case of the bigger planters. Some planters send the cherry to the curers after drying it on the estate. The curers who are signatories of the West Coast Curers' Agreement charge Rs. 2 per cwt. for drying, bulking, sizing and garbling. Except at Tellicherry where the rate is Rs. 1-14-0 per cwt., "Cherry" coffee prepared by the curers fetches a higher price than that prepared on the estate. The expenses of drying and hulling "Cherry" coffee in some minor centres are as under :—

	Per cwt. Rs. A. P.
Mettupalaiyam	0 15 0
Virudhunagar	0 7 0
Dindigul	0 7 0

*At Mangalore, the rate is Rs. 2 per cwt. less a rebate of 5 per cent when accounts are settled before 30th June.

“Cherry prepared at the above centres is not sized or garbled as in the case of cherry prepared by the bigger curers.

I.—Burma.

(1) PREPARATION OF “ PLANTATION ” (PARCHMENT) COFFEE.

The harvesting season in Burma starts from November and continues till the end of February. It is only in Chaungue which has large plantations that coffee is prepared in parchment form. The method followed is almost the same as in India. Only the ripe berries are picked and are put into a wooden basin, having a hole at the bottom. The water channel below the basin takes the berries to a tank full of water. The well developed berries sink to the bottom and go into the pulper and later are carried by water to the fermenting tanks. The “ Parchment ” coffee is left to ferment for 30 to 40 hours. After being washed for removing the pulp sticking to the parchment, it is dried for about 3 weeks and then pounded.

(2) PREPARATION OF “ CHERRY ” COFFEE.

As most of the holdings in Burma are small, 90 per cent of the crop is prepared as “ Cherry ” coffee. During one season the berries are stripped twice from the branches. Green, ripe and overripe cherries picked during the day are put into a small mortar to which a little rice husk is also added to facilitate pounding. These are pounded with a pestle in a mortar. Since moist and dry berries are mixed together when pounding, some of these get flattened and some are reduced to bits. After a few minutes of pounding, the berries are taken out and spread about 3 to 4 inches thick on bamboo mats. The whole lot is pounded again and the beans are separated by hand sieves. They are taken to the market in baskets.

[*Preparation for market.*]

INTER-CHAPTER FOUR.

The quality of coffee depends to a considerable extent on the manner in which the crop is prepared for the market. Even the best of the crop can be spoiled by crude methods of preparation.

Two methods of preparation are used in India—the “dry” (Native) method and the “wet” (washed) method. Coffee prepared by the dry method is known as “Cherry” or “Native”, and that by the “wet” method as “Plantation”.

For “Plantation”, only fully ripe berries have to be picked. In the case of cherry, the berries are stripped from the branches, ripe, over-ripe, and green all together. The smaller plantations do not usually pay much attention to the picking of ripe berries only.

The middle pickings bring in the best part of the crop. In the last pick, both ripe and unripe berries are stripped off the branches. This is followed by “gleanings”. As the “strippings” and “gleanings” contain beans of different stages of maturity, they are usually converted into cherry. Some estates, however, attempt to produce too high a proportion of parchment, so that a good quantity of poor and indifferent quality coffee is prepared as parchment. Sometimes, when the price of “Plantation” coffee is high or when there is a partial failure of crop and forward contracts have to be covered, the planters are tempted to convert almost the entire crop into parchment. This is a mistaken policy. A more discriminate separation of the crop into parchment and cherry would improve the quality of both the types.

Disc pulpers are the most commonly used for pulping, *i.e.*, for removing the outer skin of the fruit. The pulping machine has to be set carefully to avoid the beans getting nipped, bruised or crushed. Particularly when there is a bumper crop, however, sufficient attention may not be paid to the size of the beans put into the machine. This results in increased “Triage”.

The pulped beans are carried by water into fermentation vats from which water is drained out. Under-water fermentation is not very popular in India. In some estates, water from a previous washing which is believed to contain more fermenting bacteria, is poured into the fermenting vats. This practice might be usefully adopted generally and some research work should also be carried out to determine the nature of the organism.

The method of washing can influence quality by sorting out automatically beans of heavy specific gravity from light beans which spoil the roast. But channel washing cannot at present be adopted in many parts of India for lack of adequate water facilities.

Moist "Parchment" coffee contains 55 per cent of water which has to be evaporated by drying. Continuous and even drying are necessary to get quality outturn. The beans are spread out 2 to 3 inches thick on barabacues and green beans are picked out from the lot. The coffee is turned over at frequent intervals to avoid the beans getting spotted and discoloured. Artificial drying on account of its comparative quickness is said to give a better colour to coffee than slow sun-drying.

Coffee is sent to curing yards either in bullock carts or motor lorries and in some cases on ponies and donkeys. Lorries are, however, fast replacing other forms of transport. The slow drying of coffee in transit in bullock carts appears to give a better colour to the beans and to help in maturing those that are not fully ripe. This problem deserves further examination.

Curing involves (a) drying, (b) peeling, (c) grading and (d) garbling, and efficient curing is a major factor in the preparation of coffee for the market.

Coffee is again dried in the curing yards after which it is left over-night for cooling and is then peeled by the edge-runner to separate the parchment husk from the beans. The beans are then graded by being passed across a number of sieves fitted cylindrically or horizontally with meshes of different sizes. Some areas adopt four grades, while others use five. Foxy, flowery, black spotted, pale, defectively shaped, broken, and out size beans are then removed and are classed as "Triage".

"Cherry" coffee is prepared by the "dry" method which has an advantage over the "wet" process in that it enables beans in the different stages of ripeness to be handled together. Cherry is usually unevenly dried. In Travancore, it is boiled before being husked. Such coffee fetches a lower price. The two processes of pulping and peeling are merged in a single process of hulling in the case of cherry. It is garbled in the same way as plantation.

Some curers and shippers prepare "monsooned" coffee out of cherry for export. The beans are bagged and stacked in the open with sufficient space between each row to allow

the monsoon to permeate them. In about $1\frac{1}{2}$ month the beans get fully monsooned. They assume a silvery white colour and gain in weight from 4 to 7 per cent. After the monsoon, some shippers resort to artificial monsooning. Such shipments, however, undermine the reputation of genuine "monsooned" coffee and should be discouraged. "Monsooned" coffee is sized into "AA", "Basanally", and "Triage". The first size "AA" approximates to the "O" size of plantation and the second size "Basanally" is a mixture of small "A" "B" and "C".

Polishing was begun in India in 1931 and colouring in 1933. The traders in the South cannot be deceived by colour but the consumers who have a partiality for a natural blue colour and the merchants in the North who cannot distinguish between natural and coloured coffee are easily taken in. In view of the expanding internal market, it is desirable to stop this practice.

The polished beans deteriorate earlier than the unpolished ones and lose their colour after 2 months. The colouring substance contains poisonous matter but it is not extracted by water in the preparation of coffee decoction. In the United States of America, the United Kingdom and some European countries colouring is prohibited by law.

The small holders use second hand bags. As coffee acquires the smell of the commodities previously packed in such bags, it is desirable to use clean bags.

The curing charges for the crop cured by the signatories to the West Coast Curers' Agreement are uniform. In the case of small planters, however, such charges vary from estate to estate and may be very high, except at Tellicherry where the rate is Rs. 1-14-0 per cwt.

"Cherry" coffee prepared by curers fetches a higher price than that prepared on the estate. As the holdings in Burma are mostly small, 90 per cent of the crop is prepared as cherry.


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graph TD
    Planter[PLANTER] --> Curer[Curer]
    Planter --> Itinerant[Itinerant merchant]
    Planter --> CommissionAgent1[Commission agent]
    Planter --> Broker1[Broker]
    Planter --> WholesaleDistributorIndia[Wholesale distributor in India]
    Planter --> WholesaleDistributor[Wholesale distributor]
    Planter --> CommissionAgent2[Commission agent]
    WholesaleDistributorIndia --> Broker2[Broker]
    WholesaleDistributorIndia --> Exports[Exports]
    Exports --> AgentLondon[Agent in London]
    Exports --> AgentContinent[Agent on the Continent]
    AgentLondon --> BrokersLondon[Brokers in London auction rooms]
    BrokersLondon --> Manufacturers1[Manufacturers]
    BrokersLondon --> WholesaleDistributorsAbroad[Wholesale distributors abroad]
    WholesaleDistributorsAbroad --> Retailers1[Retailers]
    Retailers1 --> Consumers1[Consumers]
    Manufacturers1 --> Retailers2[Retailers]
    Retailers2 --> Consumers2[Consumers]
    CommissionAgent1 --> Retailers3[Retailers]
    Retailers3 --> Consumers3[Consumers]
    CommissionAgent2 --> Retailers4[Retailers]
    Retailers4 --> Consumers4[Consumers]
    Broker1 --> Retailers5[Retailers]
    Retailers5 --> Consumers5[Consumers]
    
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The diagram illustrates the distribution network for rubber products, starting from the Planter and branching into various channels. The main distribution paths are as follows:

- Indian Market Path:**
 - Planter → Wholesale distributor in India
 - Wholesale distributor in India → Broker
 - Broker → Manufacturers
 - Manufacturers → Retailers → Consumers
- European Market Path:**
 - Planter → Exports
 - Exports → Agent in London / Agent on the Continent
 - Agent in London → Brokers in London auction rooms
 - Brokers in London auction rooms → Wholesale distributors abroad
 - Wholesale distributors abroad → Retailers → Consumers
- Direct Sales Path:**
 - Planter → Commission agent
 - Commission agent → Retailers → Consumers
- Itinerant Merchant Path:**
 - Planter → Itinerant merchant
 - Itinerant merchant → Retailers → Consumers

The diagram also shows a 'Curer' at the top left, who likely processes the raw rubber before it enters the distribution network.

(1) PLANTERS.

Some small planters personally take their coffee in bullock carts or donkey loads to the nearest market. A few of the big planters also take their crop directly to wholesale dealers in the hope of getting better prices. On the whole, however, only two to three per cent of the crop is brought by the planters in person to the market.

(2) CURERS.

The curers play a very important part in the assembling of coffee. About 50 per cent of the crop is handled by them and they combine the functions of the financier, curer, assembling agent and wholesale buyer.

Planters who hypothecate their crop with curers in lieu of loans are obliged to send their coffee to them for preparation for the market and sale. The curers in Mangalore and Tellicherry keep agents in Mysore and Coorg who are authorised to purchase forward. A copy of the contract forms used in Mangalore, Tellicherry and Coimbatore is contained in Appendix XXVII (a) to (c). "Plantation" coffee is bought forward on the basis of 7 per cent and "Cherry" coffee on the basis of 5 per cent "Triage". If the "Triage" exceeds the above limit, a deduction is made from the total amount at the rate of Re. 1 per cent.

(3) COMMISSION AGENTS.

The Commission agents in Virudhunagar, Dindigul, Mettupalaiyam Chikmagalur and Calicut play the same part in the assembling of the crop as the curers. They act as financiers, curers, selling agents and buyers of coffee.

In Virudhunagar and Dindigul they advance money to planters and to itinerant merchants, who have to send their crop to them for sale. The coffee, however, remains the property of the planter or the itinerant merchant, until sold. The agent deducts the interest on the advance, selling commission and other market charges from the sale proceeds and pays the balance to the owner of the crop.

The commission agents in Virudhunagar gather most of the Travancore *robusta* crop through brokers who collect it from small plantations. A large portion of the Wynaad *robusta* crop is assembled by the commission agents in Calicut who sell the crop on behalf of planters charging sales commission. The commission agents in Mettupalaiyam and Chikmagalur collect the crop from small planters and sell it to wholesalers and exporters on commission basis.

More than 90 per cent of the Palni crop and about 60 per cent of the Wynaad *robusta* crop is assembled by commission agents. The agents in Chikmagalur, Mettupalaiyam and Salem do not, however, assemble more than 10 per cent of the crop. In all, about 20 per cent of the total crop is assembled by commission agents.

(4) ITINERANT MERCHANTS.

The itinerant merchants who assemble the Palni crop are subsidised by commission agents from Virudhunagar and Dindigul. They buy the crop from the planters outright, and after getting it pulped at the nearest estate pulper, hand it over to the commission agent for sale on a fixed commission. Investigations in the course of the marketing survey showed that some itinerant merchants advance money to the planters at rates of interest ranging from 15 to 25 per cent and buy the crop forward. This practice is

very common in Wynaad and Nilgiris. In Travancore, the village merchants go round from house to house buying small quantities which they sell to commission agents or wholesale dealers after drying and milling.

About 15 to 20 per cent of the total crop is assembled by the itinerant merchants.

(5) WHOLESALE DEALERS.

Some wholesale dealers in Mangalore, Tellicherry, Coimbatore, Virudhunagar, Dindigul and Chikmagalur buy coffee from plantations on forward or spot basis. In the case of forward purchase they estimate the quantity and value of the crop and fix the price which is often paid in advance, the crop being hypothecated to them. About 10 per cent of the crop is assembled by wholesale dealers.

(6) BROKERS.

Brokers buy coffee from the estates on behalf of wholesale dealers and commission agents. The brokers are common in Mettupalaiyam and Travancore. Those in Mettupalaiyam charge a commission of 2 to 2½ annas a bushel which works out at 9½ to 12 annas per cwt. of clean coffee. The brokers in the *robusta* area in Travancore charge 1 anna per maund (32 lb.), i.e., 3½ annas per cwt. for coffee despatched to the wholesale dealers in Virudhunagar. About four to five per cent of the crop is assembled through brokers.

B.—Organisation and control of markets.

(1) PRINCIPAL ASSEMBLING AND DISTRIBUTING CENTRES.

The word "market" has several connotations. In ordinary parlance, a market is a place where persons collect for selling and buying any kind of article. So far as coffee is concerned, a market may be taken to mean a place where the planters part with their coffee and the assembling and distributing agents start to function.

As stated earlier, the bulk of the coffee crop is sold by the curers or the commission agents on behalf of the planters. The primary and terminal markets in such cases are, therefore, the same as the curers and the commission agents perform both assembling and distributing functions.

Mangalore is the biggest assembling and distributing centre of coffee in India where the largest number of well-established and reputed curers is concentrated. Apart from selling or shipping on behalf of the planters, the curers are themselves large buyers of coffee. The auction room or the godown of the curer serves the purpose of a market place. Besides the curers, there are several shippers who buy direct from planters either on plantations or ex-curing works in Mangalore. About 40 to 50 per cent of the total coffee crop is assembled and marketed through the various distributing agencies in Mangalore and more than 75 per cent of the exports from India pass through this port.

Coimbatore, which comes next, is the biggest assembling centre for the coffee produced in the Madras Presidency, Travancore and Cochin. As in Mangalore, the greater portion of the crop is assembled by curers and either sold to wholesalers or shipped abroad on behalf of the planters. The curer's godown serves as the assembling and distributing centre. Some of the wholesalers collect the crop from estate to estate and bring it to Coimbatore for sale.

Tellicherry gets a large portion of the Coorg crop and some Mysore and Wynaad coffee. There are three big curers who arrange sales by private negotiation or auction through their branches in Mangalore. The itinerant merchants gather the crop and bring it to Tellicherry for sale.

Calicut.—Almost the entire produce from Wynaad and Naduvattam (Nilgiris—Wynaad), about fifty five per cent of Nelliampathis and a small quantity of Nilgiri coffee is marketed through Calicut. There is only one curer, and two commission agents who assemble and sell *robusta* from Wynaad. Itinerant traders buy from small plantations and sell to retail salers in Calicut.

In *Mettupalaiyam* the wholesale dealers, commission agents and small curers assemble and distribute about sixty per cent of the Nilgiri crop.

Kannankurchi, Yercaud and Salem district are assembling centres for Shevaroy coffee. About fifty per cent of the Palni coffee is initially assembled in Pattiveerampatti, fifteen per cent in Dindigul and ten per cent at Kannivadi, but finally ninety per cent of it reaches Virudhunagar. The remaining ten per cent goes to Coimbatore.

Chikmagalur is an assembling centre for “Cherry” coffee produced by the small planters in Kadur district (Mysore State). The godowns of the wholesale dealers serve as the market place. With the help of the Mysore Government a curing factory has been opened in Chikmagalur.

Hunsur in Mysore State assembles about eight to ten thousand cwt. of Coorg coffee every season. The curing works in Hunsur is the main assembling centre.

(2) ORGANISATION AND CONTROL.

Except in Mangalore, and to a limited extent in Coimbatore, there has been no attempt to bring the buyers together in a particular place so that competitive buying may help the producer to get the maximum price for his coffee. The planters have no control over the selling organisation. The curers and commission agents who sell about 70 per cent of the crop practically control the coffee market. The curer sells on behalf of planters as well as buy on his own behalf according to circumstances and to his knowledge of a particular lot as cured by him for sale on behalf of a planter. This latter practice however it is claimed acts in no way against the grower as the curers who happen to be buyers run the curing and marketing sections entirely separate.

In Mangalore the auctions are organized on proper lines. The members of the Mangalore Curers' Association have entered into an agreement that coffee will not be sold by them except on the terms of sale as given in Appendix XXVIII. Forward contracts are executed in the form and according to the conditions of the Mangalore coffee and produce contract, a specimen copy of which is given in Appendix XXVII(a). The contract provides for fifteen per cent margin either way according to the crop outturn. In the case of spot sales by auction or private negotiation the buyer has to take delivery of the produce within seven days from the date of sale. No margin is permissible in the outturn. An interest of 12 per cent per annum is charged from the eighth day until date of payment. In case the buyer does not take delivery within fourteen days, the seller can resell the produce by auction on or before the seventeenth day from the date of sale. A notice of resale is posted on the Curers' Association notice board to notify the buyer who is liable for any loss on resale but is not entitled to the profit, if any. Payment is made in cash. The curers communicate the conditions and tendencies of the market to the planters to give them an idea of the price they may expect. While some planters give full authority to the curers to sell when they consider

the prices favourable, others send instructions from time to time as to the minimum price at which the produce might be sold. The offers are communicated to the planters by telegram and telegraphic instructions are received to sell or hold on.

Auctions are held almost every day in the week except on Sundays and holidays. They are announced from day to day by the curers. A circular is sent round to dealers by about 11 A.M. on the auction days, giving details of the lots intended for sale. Appendix XXIX gives a specimen form of the circular. When plantation assortments are for sale, a sample bag of the first grade "A" is kept for inspection in the auction room. The quantities of the different grades "P", "B", "A", "B" and "C" are shown in a card attached to the bag. The names of estates are scrupulously left out, and the lots are marked No. 1, 2, etc. For "Plantation" coffee, the weights are given in terms of cwt., quarter and lb. and in the case of "Cherry" coffee in terms of candies*, maunds and lb. The assortments are valued on the basis of fair average quality, and the quantity of "Triage" is understood to be limited to 7 per cent. When particular grades are to be sold, the grade name and the quantity are displayed on the sample bag. "Blacks and Bits" are always sold separately.

In the case of "Cherry" coffee, "A", "B", "C" and "Peaberry" are mixed and a sample bag is exhibited. Buyers draw a small sample in their hands to estimate the percentage of each grade and value it accordingly. (see plate facing page 180) "Blacks and Bits" as in the case of "Plantation" coffee, are sold separately.

A sealed box having a slot at the top is kept in the auction room. Buyers bid for selected lots and post the bid forms in the sealed box. The curers who auction the coffee on behalf of the planters are themselves large buyers, and very often wish to buy lots on their own account. To avoid suspicion of any underhand dealing, they give a sealed copy of the tender to one of the traders, and place the original in the box. Auctions close at a definite hour each day. The sellers examine the bids and announce the sold lots by posting the lot number and the successful bidder's name on a notice board. They are not bound to accept the highest or any bid.

In the case of dispute about fair tender, arbitration is provided for. Appendix XXX gives the arbitration rules in force in Mangalore. Arbitration is conducted by two arbitrators, one nominated by the buyer and the other by the seller. If the arbitrators are unable to agree, they nominate an umpire whose award is final. The party desiring arbitration must give written notice to the other within four days of the date of tender and, in consultation with the other party, arrange for arbitration at the sellers' godown within 48 hours. It is noteworthy that the arbitrators are not provided with any standard meshes for checking up the size of the different grades and they judge merely by appearance in cases where a certain grade is alleged to be below the f. a. q. standard. Standardisation of grades with accepted methods of testing the grades is of primary importance in giving any award.

Competitive buying in auctions helps the producer to get the best price. As the auctions are not open, the chances of a ring being successfully formed by the buyers are slight. But as things are, the sale is confined to only a portion of the stock with the curers. It would be in the interests of the producer and the trade to organize the auctions on a wider basis bringing in all *bonafide* wholesale dealers of coffee within an association for purposes of buying and selling.

* A candy in Mangalore is 576 lb. avoirdupois. A maund is equal to 28 lb., each pound being 1.02 lb. avoirdupois.

Besides sale by auction, the planter sells a good quantity of coffee by private negotiation to curers and other wholesale dealers in Mangalore. The coffee lying with one curer on planter's account is sold to another curer and sometimes to the same curer on the report of the market conditions sent by the curer.

There is no curers' association in Coimbatore but only two curing firms. Under the auspices of the Coimbatore Chamber of Commerce and in conjunction with the leading buyers, arbitration rules, similar to those in Mangalore, have been drawn up and an arbitration panel is in existence, although, since its inception in 1936, there have been no cases brought before it. In Coimbatore, besides the buyers and sellers, the local Chamber of Commerce is also a party to the arbitration and receives a fee of Rs. 10 per arbitration. All the leading local firms and individuals interested in coffee have subscribed to the arbitration rules. A copy of the sale contract is given in Appendix XXVII(c) and of the arbitration rules in Appendix XXXI.

The curers hold auctions from time to time and an annual auction at the end of the season to dispose of the balance of the crop lying with them on planters' account. They also sell, on behalf of planters, by private negotiation on the same terms as in Mangalore, Tellicherry and Calicut. The proportion of sales by private negotiation is more than in the case of Mangalore, being about fifty fifty.

Unlike Mangalore, the auctions held at Coimbatore are open, *i.e.*, the buyers bid openly. It would appear that the chances of a ring being formed by buyers to depress the prices are greater in the case of open auctions.

The coffee cured in Tellicherry and Calicut is sold by the curers by private negotiation. As in Mangalore, the curer who is in touch with the market advises his constituents from time to time. The Tellicherry and Calicut curers follow the terms and conditions of sale observed by the Mangalore curers. As stated before, some curers despatch a good quantity of coffee cured in Tellicherry to their branches in Mangalore for sale by auction or private negotiation.

In Mettupalaiyam, auctions are held irregularly by the assembling agents who peel the "Parchment" coffee for the "Planter" or the commission agent. Coffee is exposed either in parchment form or cleaned, but ungraded. The buyers take a sample in their hands and estimate the approximate percentage of the different grades. Coffee from different estates is not bulked but auctioned separately. These auctions do not however help the planter in any way as they appear to be held only when there is excess stock with the curer. The buyers knowing the position naturally try to depress the prices.

The curers in Hunsur and Mysore also hold auctions for disposing of the coffee which cannot be sold by them by private negotiation. But as in Mettupalaiyam there is no regularity about these auctions. The business therefore is not so well organised as in Mangalore.

The curers on the whole have been able to establish confidence in the minds of the planters, although their position as sellers on behalf of planters, and large buyers on their own account, naturally gives rise to a certain amount of suspicion. It is an extremely delicate situation but it may be said to the credit of the Mangalore curers that it has worked satisfactorily so far. But any departure by any one of the curers from the standards of rectitude and integrity obtained at present would be disastrous to the coffee trade in general and to the interests of the planters in particular.

Owing to the lack of similar organisations in other places, the planters who sell through commission agents in Virudhunagar, Calicut, Dindigul, Pattiveerampatti, Mettupalaiyam, Salem and Chikmagalur are practically at their mercy. These agents are, in many instances, large buyers of coffee and, like the curers, finance the planters. The smaller planters whose estates are heavily encumbered have seldom any option but to agree to the commission agent's terms of sale. There is little or no competitive buying and the commission agent's shop is the market. The outturn and the prices given by the commission agent are the last word so far as the planter is concerned. The small planters have little or no idea of prices ruling in the local markets and much less in the neighbouring markets.

Organised and open markets in the principal assembling centres like Mangalore, Tellicherry, Calicut, Coimbatore, Mettupalaiyam, Virudhunagar and Chikmagalur would enable the planter to obtain the highest price for his produce. At present, his knowledge of prices, stocks, and their movement is next to nothing. Further, the grades and grade names differ from centre to centre, and the smaller planters do not even attempt to grade their coffee. The question of instituting open and regulated markets in the above centres should be considered as a means of helping the planter to know what price his neighbours and planters situated in other areas have received. This would encourage him to produce quality coffee which, if graded, would help him to get better returns. All middlemen and buyers operating in these regulated markets should be licensed by a market committee. The standardisation of weights and measures, market charges, and other allowances would also help the planter in realising higher value for his produce.

C.—Market charges.

It is only in one or two markets that the charges are fairly uniform from agent to agent. In other places they vary according to the usage, custom and contract. The signatories of the West Coast Curers' Agreement have done a lot to standardise the market charges in the areas in which they operate. But only about 50 per cent of the crop passes through them. The smaller planters are more or less in the hands of the dealers, brokers, and commission agents and have to accept their deductions. The following table indicates the market charges incurred by planters:—

	Through curers in Mangalore, Coimbatore, Calicut and Tellicherry.		Through commission agents. Plantation and cherry.			Through itinerant vendors.
	Planta- tion. (Per cwt.)	Cherry. (Per cwt.)	Calicut. (Per cwt.)	Virudhu- nagar. (Per cwt.)	Dindigul. (Per cwt.)	
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
Selling commis- sion.	0 8 2 to 0 13 2	0 8 10 to 0 11 3	0 8 0	0 6 8 to 0 13 5	0 9 0 to 0 13 5	0 9 6 to 0 12 0

	Through curers in Mangalore, Coimbatore, Calicut and Tellicherry.		Through commission agents. Plantation and cherry.			Through itinerant vendors.
	Planta- tion. (Per cwt.)	Cherry. (Per cwt.)	Calicut. (Per cwt.)	Virudhu- nagar. (Per cwt.)	Dindigul. (Per cwt.)	
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
Fire insurance	0 0 8 to 0 1 4	0 0 7 to 0 1 4	..	..	..	..
*Handling, weigh- ing and sundry charges.	..	..	0 1 6	0 3 5	0 2 6	..
Charity	..	..	0 0 3	0 0 3	0 0 4	..
Brokerage and melal. (Com- mission to the buyer's agent).	..	..	0 1 9	0 4 6	0 2 6	..
Deductions in weight.	..	..	..	..	0 9 0	1 0 0 to 2 0 0
	0 8 10 to 0 14 6	0 9 5 to 0 12 7	0 11 6	0 14 10 to 1 5 7	1 7 4 to 1 11 9	1 9 6 to 2 12 0

* The handling and weighing charges are included by the curers in the consolidated curing charges of Rs. 37-8 per ton for plantation and Rs. 40 per ton for "Cherry" coffee.

Planters who sell coffee through the curers who are signatories of the West Coast Curers' Agreement are charged a selling commission varying from $1\frac{1}{4}$ to $2\frac{1}{2}$ per cent depending on whether the crop is hypothecated to the curer or not. It is understood that in the case of hypothecated crop the planter is charged a selling commission of 2 to $2\frac{1}{2}$ per cent, even if the crop is sold on the estate. A fire insurance premium ranging from $\frac{1}{8}$ to $\frac{1}{4}$ per cent is also charged by the curers in addition to the selling commission. The buyer usually supplies the bags and in most cases the price quoted is *ex-bags ex-godown*. Some of the curers charge 9 pies per cwt. for weighing. If the sales are taken as arranged on f. o. r. terms, the charges work to 6 annas per cwt. for packing, weighing, and loading in the railway wagon. The railway insurance amounting to about 2 to 3 annas per Rs. 100 is also borne by the planter. In the case of cherry, the curers charge a selling commission of Rs. 3 per candy (576 lb.). On shipments abroad, the charges for packing and handling coffee amount to about 10 annas per cwt.

The commission agents in Calicut charge only Re. 0-11-6 per cwt. from the planters as sales commission. The lower market charges are, however, made up by the high rate of interest which ranges from 12 to 18 per cent.

The commission agents in Dindigul buy at the rate of 1,000 tolas a maund and sell at 960 tolas, making a net profit of 40 tolas per maund. They also charge 2 to 3 annas per maund (25 lb.) from the planters as selling commission and $1\frac{1}{2}$ annas per maund from the buyers as discount. The planter has to pay weighing, stitching and packing charges and has also to forego about 1 lb. per maund as loss in weight.

In Virudhunagar the commission agents charge selling commission from $1\frac{1}{2}$ to 3 annas a maund (25 lb.). They usually sell the crop after peeling and the outturn given by them is accepted by the planters.

In Chikmagalur, the market charges are about Rs. 4-8 for Rs. 100 worth of coffee. Some of the brokers in Mettupalaiyam, Chikmagalur and Shevaroy charge $9\frac{1}{2}$ to 12 annas per cwt. as sales commission. Some itinerant merchants, who buy "Parchment" coffee from plantations, deduct 3 lb. per bushel on the plea that coffee is not well dried on the estates. This deduction on top of the heavy interest charged for advances is a big burden on the poor planters.

D.—Finance of assembling.

(1) CURERS.

The curers are the biggest financiers of coffee in India. The planter looks to them for finances and, in some cases, for the supply of tools, plant and manure. Some of them are also shipping agents. Besides financing, preparing, selling or shipping the crop, the curer often houses and entertains the planters when they are in town. The banks are seldom inclined to give loans to planters as it is difficult for them to realise the money. The curers who advance money make it a condition that the coffee would be cured and sold by them. They thus acquire a lien on the present as well as the future crops.

It is estimated that the curers have advanced about Rs. 10 lakhs to planters in Mysore, about 5 to 6 lakhs in Coorg, and about 5 to 6 lakhs in Nilgiris, Anaimalais, Shevaroy, Billigirirangan, Nelliampathis and Naduvattam.

The curers in Mangalore and Tellicherry keep agents in the producing areas who visit the plantations from time to time. The agents tour the areas in February, March and April to estimate the quantity of the crop. They are given a commission of $\frac{1}{4}$ to $\frac{1}{2}$ per cent by the curers. They are usually experienced coffee buyers and the loans are based on their valuation. Previously, Rs. 100 per candy (576 lb.) of "Cherry" coffee used to be advanced to the planters, but since the slump in prices in 1936 it has been reduced to Rs. 50 per candy. The interest charged varies from 7 to 12 per cent depending on the risk involved.

It is understood that the curers obtain loans from the banks at the rate of 4 per cent. Large amounts were advanced by the curers to the planters when prices were high but as prices dropped suddenly in 1930 the curers have been finding it difficult to realise their advances and many of them would consider themselves lucky if they realise their capital. The system of financing by the curers is thus more in the nature of personal credit than advances on the actual crop.

(2) LONDON FIRMS.

When the greater part of the Indian coffee was shipped to London for sale or for re-exporting, the London firms used to finance the planters on what were called "Sterling terms". They usually advanced about 60 to 80 per cent of the estimated value of the crop which could be made into "Plantation" coffee. The planters in India or their London agents drew or negotiated the bills on the London firm at from three to six monthly usance and these bills were negotiated in India on the credit of the accepting firm in London, which charged about $\frac{1}{2}$ per cent for acceptance. The planter was charged interest at 5 per cent per annum on bills maturing in London. In practice, however, coffee was sold and the firms realised their money before the bills matured. Consequently, the interest actually paid by the planter in India would seldom work out at even 2 per cent. The crop was mortgaged to the London firm which advanced the money and they had the right to sell. But if better prices were obtainable in the Indian market, the London firms sometimes permitted the sale of the crop in India charging a sales commission of $1\frac{1}{4}$ per cent. This method of financing was in the interests of the planter, as the sales commission and interest payable on advances were not excessive. Due, however, to the increased demand for coffee in India, direct sales to the Continent by Indian shippers and the small export to London, the London firms gradually reduced the credit facilities and the amount of such loans would not now exceed two lakhs of rupees.

(3) COMMISSION AGENTS.

The commission agents in Virudhunagar, Dindigul, Pattiveerampatti and Kannivadi advance money to Palni planters at interest ranging from 9 to 12 per cent. The crop is hypothecated to the agents who sell the stocks at a stipulated discount. About 60 to 70 per cent of the value of the crop is advanced and it is understood that about three to four lakhs of rupees are thus invested. The commission agents also advance money to itinerant merchants who go from estate to estate and buy the produce. These merchants are charged an interest of 6 per cent if they give immovable property as security and 9 to 12 per cent on personal security. About fifty thousand to a lakh of rupees have been thus advanced to itinerant merchants. The Wynaad agents, through whom most of *robusta* crop is marketed, charge interest at 12 to 18 per cent besides a selling commission. An appreciable quantity of the Shevaroy crop is assembled by *chetties* who advance loans to planters charging interest at 12 to 15 per cent. The commission agents in Chikmagalur charge interest at 10 to 24 per cent besides selling commission.

(4) ITINERANT MERCHANTS.

The itinerant merchants who buy spot or forward from the planters also advance money on the standing crop. Normally, the interest charged is about 10 to 12 per cent, but sometimes it is as high as 25 per cent. These merchants usually advance money to the very small planters who are always needy. Some of them deduct the interest from the amount asked for and give only the balance to the planters.

(5) BANKS.

The banks, especially the indigenous banks, give loans at rates varying from $4\frac{1}{2}$ to 6 per cent to commission agents who pledge the produce with them. About 75 per cent of the value is advanced and the amount thus invested

may be estimated at about 10 to 15 lakhs. The commission agents who borrow money from the banks give advances to the planters securing a net profit of 3 to 7½ per cent interest. The curers also get open loans from the Imperial Bank of India at the rate of 4 per cent and make about 5 per cent by advancing these funds to planters.

(6) GOVERNMENT LOANS.

The Government of India advanced Rs.3,34,255 in 1936-37 and Rs. 2,41,840 in 1937-38 to planters in Coorg. These loans are returnable in five equal instalments by the 31st March 1942. The amount advanced varied according to the condition of the estate, but was not to exceed Rs. 46 per acre. Land or crop previously hypothecated or mortgaged was not accepted as security. The interest charged is 3½ per cent per annum. The instalments and interest are payable before 31st March each year but in the case of planters who export coffee, the date is extended to 31st May. In the case of defaulters, recoveries are effected by the attachment and sale of the estates offered as security. In case there are no bidders, the estates may be taken over by Government but instances of this nature have not so far occurred. The following amounts have been recovered so far :—

	Rs.	A.	P.
1937-38	80,882	7	0
1938-39	1,13,398	3	0
1939 (upto 31st December 1939)	71,488	6	0
Total	2,65,769	0	0

As the curers and the Coorg Planters' Co-operative Society had, in many cases, advanced money on the standing crop and in some cases on the estate of the planter, the scope of the Government loans was necessarily restricted.

In June 1936, the Government of Mysore sanctioned a scheme for the grant of *taccavi* loans to planters. A sum of Rs. 3 lakhs was provided in 1936-37, two lakhs in 1937-38, one lakh in 1938-39 and one and a half lakhs in 1939-40. The following amounts have so far been advanced :—

	1936-37.			1937-38.			1938-39.			1939-40		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Kadur	60,854	61,351	9 0	95,350	1 0	1,04,472	7 0					
Hassan	11,535	12,306	0 0	15,200	0 0							

The amount realised by Government upto 1939-40 in Kadur District was Rs. 2,09,694-5-3 and in Hassan Rs. 30,070-3-10.

The land and the crop and such further collateral property as considered necessary is taken as security. In the case of estates previously mortgaged, the mortgagees' consent to treat the Government loan as the first charge on the estate is required. The loans are not to exceed Rs. 30 per acre and are advanced in monthly instalments. The interest charged is 4 per cent and the loans are repayable in one instalment. In August 1939, the Mysore Government appointed a Committee to investigate the condition of the coffee planting industry with a view to examining the adequacy or otherwise of the existing credit facilities for planters and to suggest measures that might appropriately be taken directly or through State aided agencies to stabilise the industry.

Besides the amount advanced by the Mysore Government, it is understood that the Banks in Mysore State have advanced about Rs. 15 lakhs to the planters in Mysore. The amount of loan is usually repayable in an year and the interest charged varies from 6 to 9 per cent.

(7) CO-OPERATIVE CREDIT SOCIETIES.

The Coffee Planters' Co-operative Society of Coorg was registered in the year 1920. It advanced Rs. 3,900 in 1920, Rs. 4,500 in 1921 and Rs. 2,000 in 1922.

The society ceased to function in 1922 as the recovery of the loans was unsatisfactory and the society had no funds to advance fresh loans. The loans were repayable in one or two instalments and bore interest at $8\frac{1}{2}$ per cent per annum. About Rs. 50 per acre was normally advanced.

The society was revived during 1929-30. The amount of credit afforded by it to its members is indicated below :—

									Rs.	A. P.
1930-31	.	.	.	.	.	.	.	.	28,330	0 0.
1931-32	.	.	.	.	.	.	.	.	23,435	0 0
1932-33	.	.	.	.	.	.	.	.	28,071	0 0
1933-34	.	.	.	.	.	.	.	.	14,173	0 0
Total									94,009	0 0

The granting of loans was stopped in 1934-35 as it was found difficult to recover the advances due to the slump in the coffee market. A sum of Rs. 19,348 is the balance outstanding against 18 members of the society. As, however, the estates of the defaulters can be attached for non-payment, the society may not eventually lose more than Rs. 4,000 as bad debts.

(8) CONCLUSION.

More than 75 per cent of the acreage under coffee in India appears to be encumbered. Either the crop or the estate is mortgaged and the interest charged ranges from 7 to 25 per cent. The smaller planters are in a worse plight than the bigger ones. As their individual security is not sufficient to enable them to get an advance from the banks or the curers, they are compelled to approach sources which charge heavy interest on top of selling commission and other allowances. The high rate of interest paid by them ultimately reacts on the quality of their crop as they do not have the necessary funds to finance the manuring and preparing of the crop on proper lines. The bulking of the produce of the small planters and financing them on a co-operative basis are possibilities which have to be explored. A cheaper method of financing the big as well as the small planters has to be evolved. Even the big planter has to pay interest upto 9 per cent for the advances received by him and once the crop is hypothecated he has no option in choosing his curer and seller.

Further, the marketing charges (including interest) on hypothecated crop are frequently about double than that on non-hypothecated. The return to the planter who has mortgaged his coffee is reduced by about 6 to 8 per cent, and in some cases by about 15 to 20 per cent.

E.—Burma.

The chief assembling centre for the coffee produced in the Shan States is Aungban from where it is transported to Rangoon. The Karen Hills crop goes to Toungoo, and the Chaungwe crop is collected in Chaungwe itself. The coffee from Sinbimkaha Hill tracts is assembled in Bhamo.

The plantations in Shan States usually run small. The small producers take the crop to neighbouring markets which are held once in five days. The chief markets are Myaing, Binlaung, Pindaga and Pwela. The village merchants take up different positions in the market spreading bamboo mats before them over which a balance known as "Li" is fixed. The producers, who generally bring a viss (3 seers) or two of coffee, bargain with the buyers. The balance is adjusted to give an extra 5 per cent to the buyer. The village merchants in their turn sell the coffee to the agents of the merchants in Aungban. These agents usually receive a commission of 2 to 3 per cent, but they have to meet a bazar tax of Re. 0-2-0 per 150 lb. of coffee. Some village merchants take coffee directly to Aungban where they sell through brokers who are paid a brokerage of Re. 1 per hundred viss.

The planters in Karen Hills either sell their produce to village traders or take it to Toungoo. The manufacturers in Toungoo buy directly from village traders or small growers. About one-third of the growers have to take advances from the village traders for periods extending from one to seven months ahead of bearing time. 50 to 80 per cent of the estimated value is given in advance by the village traders.

Bulking of the crop in particular areas by the planters should help in reducing the marketing charges and getting a better price for them. The growers in Burma are in the hands of village traders who quote very low prices. The village merchants, as mentioned above, use defective weights to the further disadvantage of growers.

The introduction of the "Thamadi" mark in 1939 indicating trust and fair dealing should give some protection to the growers. A tested 9 gallon basket and sets of weights stamped with "Thamadi" mark have been made available to the public. These provide the first approach in Burma to a standard weight and measure bearing the official mark of Government authority. Meetings are being held in villages to explain the usefulness of standard weights and measures. True weighing and measuring Committees are also being set up in villages for testing all weights and measures submitted to them and for stamping those which pass the test.

INTER-CHAPTER FIVE.

About 50 per cent of the crop is handled by curers, 20 per cent by commission agents, 15 to 20 per cent by itinerant merchants, 10 per cent by wholesale dealers, and 4 to 5 per cent by brokers. About two to three per cent of the crop is brought by the planters in person to the market.

Curers and commission agents combine the functions of financier, curer, assembling agent, and wholesale buyer.

The largest number of well-established and reputed curers is concentrated in Mangalore. About 40 to 50 per cent of the total crop is assembled and marketed through Mangalore and 75 per cent of the exports pass through this port. Coimbatore, which comes next, is the biggest assembling centre for coffee produced in Madras Presidency, Travancore and Cochin.

Except in Mangalore and to some extent in Coimbatore, no attempt has been made to bring the buyers together so that competitive buying may enable the producer to get the maximum price for his coffee. The auctions in Mangalore are run on proper lines. Buyers, including curers, if they wish to purchase any lot, post the bid forms for selected lots in a sealed box. In the case of dispute, arbitration is provided, but the arbitrators are not supplied with any standard sizer when the grades are under dispute. The arbitrators have to judge by appearance. Standardisation of grades with accepted methods of testing the grades is of primary importance in giving an award.

Unlike Mangalore, the auctions at Coimbatore are open, *i.e.*, the buyers bid openly, and the chances of a ring being formed by the buyers to depress the prices are greater in such cases. Owing to the lack of similar organisations in other places, the small planter who sells through commission agents is at their mercy and has to accept their terms of sale. His knowledge of prices, stocks, and their movement is next to nothing. Regulated markets in the principal assembling centres would enable him to know the price which his neighbours and planters situated in other areas have received. This would encourage him to produce quality coffee, which, if graded, would bring in better returns. All middlemen and buyers operating in such regulated markets should be licensed by a market committee. The standardisation of weights and measures, market charges and other

allowances would also help the planter in realising higher values for his produce.

Except in one or two places, the market charges vary according to usage, custom and contract. The commission agents in Dindigul buy at 1,000 tolas a maund and sell at 960 tolas. Some itinerant merchants deduct 3 lb. per bushel on the plea that coffee is insufficiently dried on the estates. Such practices are a heavy burden on the poorer planters.

The curers have advanced about twenty to twenty-two lakhs of rupees to planters in different areas. They obtain loans from the banks at the rate of 4 per cent and make about 5 per cent by advancing these to planters. The commission agents also secure a net profit of 3 to 7½ per cent interest in a similar manner. As, however, prices have dropped since 1930, many curers would consider themselves lucky if they realise even their capital. The system of financing by curers is more in the nature of personal credit than advances on the actual crop.

When the greater part of the Indian coffee was shipped to London for sale or for re-exporting, the London firms used to finance the planters. Due, however, to the decrease in exports to London and direct sales to the Continent, the London firms have reduced their credit facilities and the amount advanced by them to Indian planters would not now exceed two lakhs of rupees.

The Government of India granted some loans to planters in Coorg but as the curers and the Coorg Planters' Co-operative Society had, in many cases, advanced money on the standing crop, and, in some cases, on the estate of the planter, the scope of Government loans was necessarily restricted.

Since June 1936, the Government of Mysore have also sanctioned a scheme for the grant of *taccavi* loans to planters.

More than 75 per cent of the acreage under coffee in India is encumbered. Either the crop or the estate is mortgaged and the interest charged ranges from 7 to 25 per cent. Once the crop is hypothecated, the planter has no option in choosing his curer and seller. Further, the marketing charges (including interest) on hypothecated crop are frequently about double those on non-hypothecated. A cheaper method of financing the big as well as the small planters needs to be evolved.

CHAPTER VI.—CLASSIFICATION, GRADING AND STANDARDISATION.

A.—General.

It is acknowledged that India produces some of the best coffees in the world. Classification and grading and systematic sales on the basis of grades ensure a premium on quality which ultimately stimulates quality production. Standardised grades increase mobility of trade drawing into the ambit a bigger and steadier stream of buyers and a larger and more satisfied number of consumers. It lifts the range of operation from adjacent markets to the more distant and world markets eventually bringing in increased returns to the producers. It also helps in placing the right types in the right markets and eliminates the necessity of the buyer examining each sample before placing an order. Owing to confusing classification, multiplicity of grades, grade names and admixture of grades the price quotations at present obtaining are of little commercial value. Better comparison of price data in different markets is possible only when the grades of quality are standardised. The present individual system of grading at different centres has its uses but is unsatisfactory from the point of view of the industry. If the welfare of the industry as a whole is improved all the individuals concerned stand to benefit.

B.—Present practices of classification.

The terms used to denote the various commercial types of coffee in trade parlance are by no means identical in different centres. It is, therefore, necessary in the first instance to standardise even the broad classification of the commercial types. The classifications followed in Mangalore, Tellicherry and Calicut are different from those in Coimbatore. The following are the broad classifications :—

(1) *Arabica*—

(a) “ Plantation ”.

(b) Cherry dried (Native).

(i) Coast cured.

(ii) Whole crop estate pounded.

(iii) “ Monsooned ”.

(2) *Robusta*—

(a) “ Plantation ”.

(b) Cherry dried (Native).

(3) *Liberica*.—This is produced in very small quantities.

(1) (a) In Coimbatore, “ Parchment ” coffee is divided into (i) “ Plantation ”, (ii) Nilgiris. “ Plantation ” includes all the types such as Shevaroyis, Anaimalais, etc., excepting Nilgiris. For purposes of export trade, *arabica* “ Plantation ” coffee is classified in all the curing centres, according to types, as under :—

Arabica “ Plantation ”—

Bababudan.

Mysore.

Coorg.

Billigirirangan.
 Naidubattam (Naduvattam or Nilgiri/Wynaad).
 Nilgiris.
 Shevaroyes.
 Anaimalais.
 Nelliampathis.
 Kannan Devan.
 Malabar/Wynaad.

The characteristics of the main types are generally understood by the shippers and the importers in the United Kingdom to which most of these types are at present exported. They are, however, comparatively unknown and likely to be confusing to buyers in other countries with which India might hope to develop direct trade.

The following are some of the special characteristics of the different types :—

- (i) *Bababudan* is round and thick in the bean and fairly bold and fair in colour.
- (ii) *Billigirirangan* is bold in character with fair colour and a certain amount of silver skin.
- (iii) *Naduvattam* has heavy, medium sized beans with fair colour. The appearance is usually not attractive though the liquoring qualities are of a high order.
- (iv) *Nilgiris*.—The bean is bold and of longish type and good blue colour. It is usually clean, *i.e.*, practically free from silver skin.
- (v) *Shevaroyes*.—The beans are of medium size rather round in shape with attractive colour and clean.
- (vi) *Mysore*.—The beans are good coloured, medium sized and usually clean. The presence of silver skin is characteristic.
- (vii) *Anaimalais*.—Bold in the bean, with a fair amount of silver skin and poor colour.
- (viii) *Nelliampathis*.—Similar in character to Anaimalais, round in type with considerable silver skin.
- (ix) *Coorg*.—The beans are medium, bold green in colour and have a certain amount of silver skin. They are longer in the bean than Mysore coffees.
- (x) *Kannan Devan*.—Similar in appearance to Coorg but having a somewhat better colour.

The classifications generally followed in the internal trade are as under :—

Mysore.
 Coorg.
 Nilgiris.
 Shevaroyes.

The names of the other types* are not familiar in the Indian markets even in the South. In the North the terms Mysore or Nilgiri coffee carry little or no meaning. Coffee is not even classified into "Plantation" or cherry

* The term "Salem Plantation" is used in Europe to designate ungraded "Plantation" ex-Peaberry.

dried. This indicates the need of some simplified and clearly defined form of classification which might be readily understood by any intelligent retailer or consumer interested in buying Indian coffee.

- (b) "Cherry" coffee is not usually classified according to districts either for export or internal trade. It is usually shipped as Malabar Native or Mysore Native. "Monsooned" coffee is shipped as "Malabar Native AA" or as "Monsooned coffee". These descriptions in themselves are by no means illuminating to a prospective new buyer. In the Indian market "Cherry" coffee is simply cherry coffee and is not classified under different types.
- (2) *Robusta* is not sold on the basis of types. However, in Virudhunagar, *robusta* from Travancore which is prepared in a primitive way is marketed separately as Malayalam *robusta*.

C.—Quality factors.

The factors that constitute quality are complex, as coffee from different centres varies in the bean, roast and the cup. In spite of the close scientific investigation that has been carried on for years, it must be conceded that reliable tests of quality have yet to be evolved. The most commonly used is the liquoring test but it cannot be called scientific as it is liable to vary considerably with the person, place, time and the water used. It is, however, the best commercial test for all purposes and is most widely used for valuing coffee, though in India it is practically unknown. The exporters in India are therefore working under a handicap, as they have to make their shipments without reference to any specific standard of liquoring quality. As competition is getting keener there is need for a closer study in India of liquoring quality in relation to other factors such as district, size of bean type, variety, etc. A recent examination of samples drawn from top grades of consignments shipped to England showed that due discrimination is not being observed in regard to this factor and some coffees of inferior liquoring quality are being shipped. It would appear that the loss to the producer on such consignments might be avoided if the coffee were submitted to a qualified taster in India.

Quality is generally judged in respect of a few salient features, *e.g.*, (1) size, (2) shape and evenness, (3) colour, (4) natural test weight and (5) liquoring quality.

Size.—Size by itself cannot be taken as the index of quality, the larger the bean the better the quality may be true in a general sense but the "Elephant" beans or beans of abnormal size of different varieties of coffee are considered as inferior quality. Given coffee of a certain type, however, grown in a particular area, size in so far as it is an index of maturity may also be taken as indication of quality. Other conditions being equal, the bolder beans are preferred and fetch a premium in the market. Grading in India is at present done mainly on size basis by means of sizer gauges. Indian and Continental buyers generally look for bold sized beans and their preference for this type of bean can only be disregarded at the expense of price.

Shape and evenness.—Similarly given coffee of the same type and district, shape is one of the quality factors. A round thick bean is considered superior to a long one. The London trade appears to prefer round thick beans of the old "Chik" variety. The alleged complaints in recent years of the unevenness of Indian coffee enhance the importance of this factor. Mixing of grades, indifferent grading and want of standardised size grading give rise to unevenness of the beans. An even size of bean gives an even uniform roast and must, therefore, constitute an important quality factor.

Colour.—Colour is an elusive factor and varies from district to district, plantation to plantation and even in different pickings from the same plantation. The trade looks for particular shades of colour in different classes of coffees coming from particular areas. A number of pale dark spotted, brown and foxy coloured beans in any class of coffee render it definitely inferior.

An examination of sample from different producing areas and of samples drawn at different periods from the same plantation indicate that a wide range of colours exists in beans placed in the same class from the point of view of liquoring quality. For example the colour of the bean of the best cup quality in a series of tests varied from grey to blue as under :—

Cup quality.	Colour.
"A" 1	Blue. Green. Grey.
"A" 2	Blue. Green. Grey.
"B" 1	Green. Dull grey.

As a rule fine bluish tint is preferred to a dull grey but there is a good deal of overlapping in the intervening shades. That it is difficult to link colour with particular areas and varieties is seen from the following :—

Arabica "Plantation".

Place.	Blue.	Number of samples.		Brownish green.
		Green.	Grey.	
Bababudan	8	18	16	..
Nilgiri and Naduvattam	4	4	10	2
Billigirirangan	3	7	2	..
Mysore	3	23	30	1
Coinbatore	..	5	3	..

The distinctive characteristic however of the better types of coffees from Bababudan, Billigirirangan, Naduvattam and Nilgiris is a blue colour, those from Mysore bluish green, and from Coorg and High Range greenish.

"Pale" beans lower the liquoring quality. Tests conducted on samples drawn from different producing areas in India showed the following proportions of "Pales" :—

	No. 1 cup quality	No. 2 cup quality	No. 3 cup quality	No. 4 cup quality
	Per cent	Per cent	Per cent	Per cent
Average	14	4.75	10.8	12.2
Maximum	1.5	15	2.4	32
Minimum	Nil.	Nil.	Nil.	Nil.

Here, there is obviously a direct relation with liquoring quality. The lower the proportion of "Pales", the better the cup quality.

Colour is of relatively little importance in the case of "Cherry" coffee. A greater amount of silver skin covers the beans which are generally of a brownish or yellow tinge.

*Natural test weight.**—The specific gravity of the bean is a fairly reliable index of quality and is perhaps the best numerical index we have at present of the quality of coffee. The trade, however, has not so far accepted this principle although in the case of Costa Rica, which is India's chief competitor, the beans are naturally sorted out in the washing channels by gravity into certain classes which are further subdivided into grades. According to certain authorities the compactness of the bean and the nitrogen content are an index of quality. The higher the specific gravity, the larger is the percentage of nitrogen. This aspect of quality needs further investigation. The analysis of 5 different samples sold on the same day in London showed the following results :—

Price in shillings. (Cwt.)					Specific gravity.	Nitrogen. (Per cent)	Phosphoric acid. (Per cent)
80	.	.	.	.	1.268	2.5	0.45
77	.	.	.	.	1.267	2.3	0.45
60	.	.	.	.	1.258	2.3	0.44
59	.	.	.	.	1.256	2.3	0.43
59	.	.	.	.	1.250	2.3	0.43

The result indicates a certain correlation between price *i. e.*, quality, specific gravity and nitrogen content. Dr. Lehmann who conducted the test further analysed 51 samples collected from different parts of the world and the results confirmed the previous opinion.

The natural test weight and the weight of 1,000 beans of samples drawn from different parts of India were recorded by the Coffee Scientific Officer, Balehonnur, Mysore, in the course of his analysis. The Imperial Economic Committee and the Indian Coffee Market Expansion Board in London also tested, on special request, the weight of beans in different size grades after they had been classified by tasters as "good", "medium" and "poor" quality. Typical samples of important grades of coffee collected in London were examined for natural test weight, weight of 1,000 beans, etc. A series of samples from India were further examined for natural test weight, liquoring quality, etc.

Better samples of coffee have generally a higher natural test weight but bushel weight or natural test weight does not alone give a direct indication of quality as the following examination of Indian coffee in London showed :—

Cup quality.					Weight in grammes of 100 c.c. of raw beans.		
					Average.	Minimum.	Maximum.
"A." 1.	.	.	.	.	67.6	66.6	69.2
"A." 2.	.	.	.	.	67.0	65.4	68.6
"B." 1.	.	.	.	.	67.3	65.0	69.7
"B." 2.	.	.	.	.	67.2	66.2	69.4
"B." 3.	.	.	.	.	67.6	65.5	69.6
"C." 1.	.	.	.	.	67.2	64.2	68.8
"C." 2.	.	.	.	.	67.2	66.0	68.6
"C." .	.	.	.	.	67.3	65.6	68.8

* Usually described in terms of weight per bushel.

The Imperial Economic Committee enquiry showed that the East African coffee which was classed as of a "very good" quality weighed 61 lb. per bushel, "good" quality Costa Rica, East African, and Indian coffee weighed 60 lb., "medium" quality of all three types weighed 59 lb. and "poor" quality Indian coffee weighed 58 lb. per bushel.

The following information collected from curers and planters shows that a higher proportion of top grades normally gives a better outturn on a natural test weight basis :—

Outturn of number of bushels per ton.

Estate A. Proportion of different grades.							Estate B. Proportion of different grades.						
Years.	"A."	"B."	"C."	"Pb."	"Tri- age."	No. of bushels per ton.	"A"	"B."	"C."	"Pb."	"Tri- age."	No. of bushels per ton.	
	(Per cent)						(Per cent)						
1926-27	73	15	2	5	5	83.87	44	22	6	15	3	95.08	
1927-28	63	17	6	6	8	96.38	24	32	22	16	6	84.78	
1928-29	61	20	5	6	8	84.62	51	22	5	12	10	82.88	
1929-30	59	27	3	6	5	84.02	30	33	16	12	9	93.50	
1930-31	53	27	4	5	11	96.35	15	40	23	13	9	92.00	
1931-32	53	30	5	6	6	85.79	18	35	8	12	17	97.29	
1932-33	57	30	3	6	4	83.95	36	36	8	10	10	96.97	
1933-34	57	30	5	5	4	84.00	30	31	7	9	13	96.92	
Average	60	24	4	6	6	84.87	34	31	12	13	10	92.42	

The trade, therefore, recognises that the less the number of bushels per ton, i.e., the higher the bushel weight of raw beans, the better the coffee.

The weight of the beans as indicated by the number of beans required to make up 8 oz. or the weight of 1,000 beans, gives a better index of quality than bushel weight. The samples of good quality Costa Rica referred to above had 1,244 beans to the half pound and medium quality had 1,344. Indian "good" quality required 1,192 beans and "medium" 1,270 to make up the same weight. What was described as "very good" East African had 1,379 beans to the half pound and "good" quality 1,590. Weight of 1,000 beans of Indian "A" ranged from 143·5 to 204·1 grammes. A series of tests conducted on samples of Costa Rica, Blue Mountain Jamaica, Kenya and Brazil showed the following results :—

Weight of 1,000 beans in grammes.

	1st grade.	2nd grade.	3rd grade.
Costa Rica	212·6	190·0	152·0
Blue Mountain Jamaica	188·0	170·0	147·0
Kenya	160·0	140·0	120·0
Santos	162·0	140·0	90·0

This clearly establishes a definite relationship between quality and the weight of a specified number of beans. It will be obvious however that this factor is a combination of the size of beans and specific gravity.

It may be observed that the lighter the beans, the poorer the roast. A mature bean is heavier than an unmaturing one. Therefore, weight should provide some indication of the maturity of the beans. Some regard should therefore be paid to this factor in the classification or grading of beans for quality.



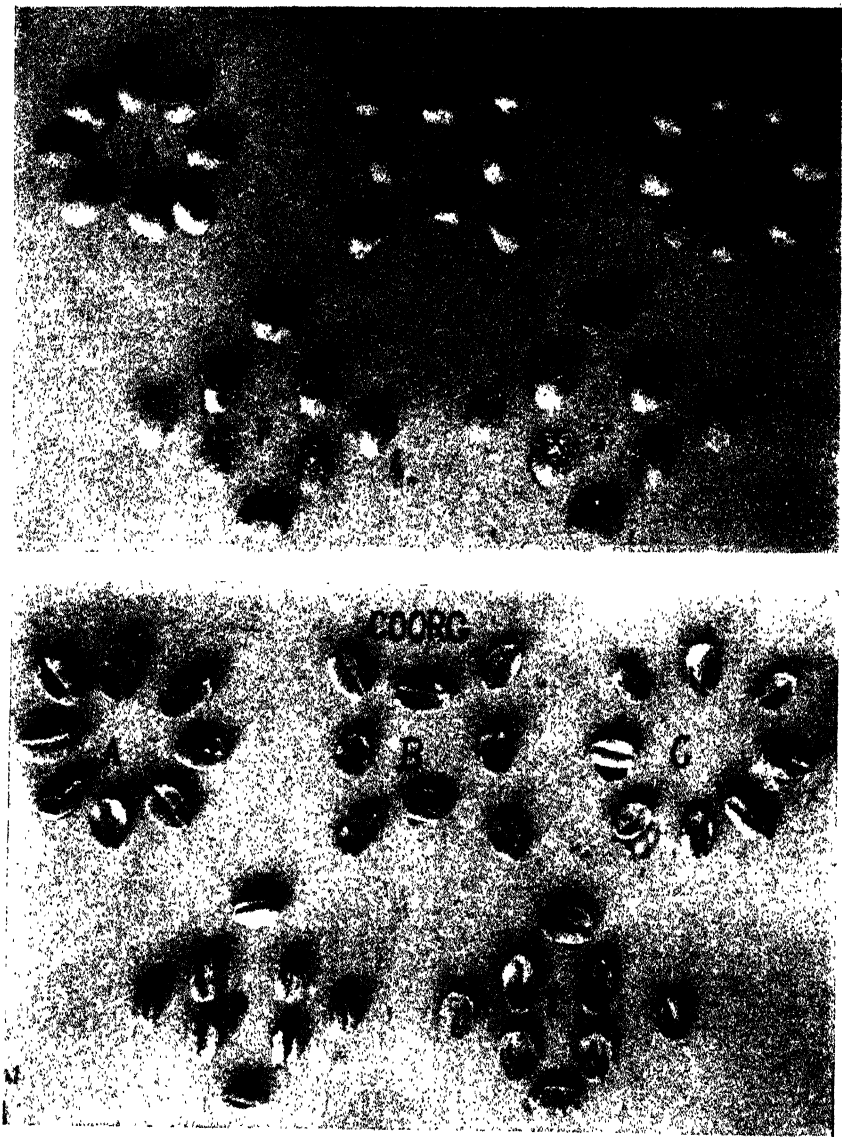
GARBLING.



SAMPLING COFFEE IN AUCTION ROOMS
AT MANGALORE.



PEELING "PARCHMENT" COFFEE
IN PALNIS.



COORG *arabica* COFFEE.

A	.	.	GRADE "A "	P	.	.	.	"PEABERRY "
B	.	.	" "B "	T	.	.	.	"TRIAGE "
C	.	.	" "C "					

Liquoring quality.—The London trade considers the liquoring test as the most important. As already mentioned the Coffee Board in Kenya employs a taster in East Africa for selecting coffee to be exported to London and other markets. Acidity, intensity, body and character are the chief factors that the connoisseurs consider in judging the quality of the infusion. The term “acidity” used in this connection has no reference to the actual amount of acid in the coffee but means a certain characteristic sharpness of flavour. In India coffee is not valued on the basis of liquoring tests. It may be observed, however, that in evaluating ground coffees marketed in India (see Appendix XXXII) the better quality coffees were found on analysis to have a higher percentage of acidity, *e.g.*, “Superfine” 22·47 per cent.

D.—Present practices of grading.

(1) RAW BEANS.

(a) Arabica “Plantation” (*Parchment*) coffee.—There is little uniformity in the methods and processes employed for grading and marking in the different curing centres. Even among the leading curers there is considerable diversity of procedure. Each curer has his own methods of grading. Two trial lots of 59 bags of the same crop from the same plantation sent to 2 curers for grading were classified as follows :—

	No. 1 curer.	No. 2 curer.
“ O ”	21 bags.	37 bags.
“ A ”	38 bags.	22 bags.
Total	59 bags.	59 bags.

From this it is evident that no standards are fixed for grading. Of late, the buyers in London have been complaining about the “mixed” sizes of Indian coffee. There it appears a widespread tendency to increase the proportion of so called “A” size in the sample. This can only be done by lowering the size limits for “A” or mixing more “B” in with the “A”. Exporters and other dealers who buy from the curers for sale on the Indian market do their own bit of “mixing” of grade sizes.

Grading as at present practised is largely a matter of the width of the bean. “Plantation” coffee is sorted out into certain grades commonly termed “O” or “A”, “B”, “C”, “Peaberry” “Triage” and “Blacks and Bits”. The usual practice is to grade “Flats” according to width and thickness of the bean as opposed to length by means of sizer gauges (see plate facing page 147). Some time ago an auxiliary sizing arrangement was made by one of the curers to further classify “O” into long “O” and short “O”, but it was given up due to the complication of multiplicity of grades for packing and selling purposes. Further, the percentage of grades obtained in an outturn depends not only on the size of the slots, but also on the rate of the feed, speed of movement and the angle of incline of the sizer sheets. The proportion of the different grades extracted from the bulk is, therefore, capable of manipulation.

The sizer gauges in themselves show considerable variation from curer to curer as will be observed from the following figures of the size of slots :—

Diameter of round slots.

(In millimetres.)

Curing firm.					" O."	" A."	" B."	" C."
No. 1	.	.	.	.	Over 7	7.00	6.5	6.0
No. 2	.	.	.	.	..	7.00	6.5	6.0
No. 3	.	.	.	.	6.8	6.5	6.1	5.2
No. 4	.	.	.	.	..	6.65	6.6	6.0
No. 5	.	.	.	.	..	7.5	6.5	5.50
No. 6	.	.	.	.	..	6.85	6.35	5.5
No. 7	.	.	.	.	..	7.00	5.5	5.0
No. 8	.	.	.	.	..	6.85	6.35	5.50
No. 9	.	.	.	.	..	6.80	6.0	5.25
No. 10	.	.	.	.	8.0	7.00	6.0	5.5
No. 11	.	.	.	.	7.0	6.5	6.0	5.5
Average	.	.	.	.	7.2	6.87	6.2	5.5
Minimum	.	.	.	.	6.8	6.5	5.5	5.0
Maximum	.	.	.	.	8.0	7.5	6.6	6.0

The diameter of slots for " O " grade varied from 6.8 to 8 millimetres, for grade " A " from 6.5 to 7.5 millimetres, for grade " B " from 5.5 to 6.6 millimetres and for grade " C " from 5 to 6 millimetres. Obviously, other things being equal, a sample of " O " of one curer dressed over 6.8 millimetres sieve would be different in size from that sold by another curer dressed over 8 millimetres sieve and these again would be very different to the " A " grades of London cleaned coffee which are dressed over sieves ranging from $5\frac{1}{2}$ to $7\frac{1}{2}$ millimetres. There is, therefore, a considerable amount of variation and overlapping between existing grades. Even the method of sieving differs from curer to curer. While some curers use sieves with rectangular slots for separating " Peaberry " from " Flats " others use round ones. Some of the curers use a double set of sieves, passing " Flats " first through round and then through rectangular slots. The present size grades are therefore just what the individual curer or merchant wishes to make them and there is much need for a general agreement in the trade in respect of the grade names applicable to different sizes.

After sorting through sieves, the beans are garbled and hand-picked for removing "Pale" foxy, defectively shaped, broken and black spotted beans, and "Elephants" (see plate facing page 180). These form a separate grade called "Triage". The black beans and the small tiny bits are further sorted out into what are called "Blacks and Bits" (see plate facing page 185).

Multiplicity of grade names and grade specifications complicate the position further. In Mangalore where the majority of the crop is cured, Plantation " A " is the first grade. What is described as " A " locally, is shipped as " O " and similarly " B " is shipped as " A ". The size of Mangalore " A " is acknowledged to be smaller than the size of Coimbatore " O " and better than " A " of Coimbatore. Further in Mangalore the bean is not classed as " Black " unless it is 75 per cent or more black while in Coimbatore beans with less percentage of black are classed as " Black ".

In Coimbatore and more particularly in Mettupalaiyam, the 1st grade is described as "O", "OO", "Extra Bold", "Royal Bold", "Royal Extra Bold", "Large", etc. The trade uses these names indiscriminately to denote the first, second or third grades. There is an utter lack of uniform grade designations. Samples of "O" from Mettupalaiyam very often approximate to "C" of Mangalore. This makes price quotations absolutely meaningless and leads to unfair competition between merchants and dissatisfaction on the part of buyers.

Tellicherry follows, to some extent, similar methods of grading as at Mangalore. In Tellicherry one of the curers sorts out small "O" separately. In Calicut the coffee from Nelliampathis is graded as "A", "B", "C", but that coming from Naduvattam is usually sized as "A", "AA", "B", "C" and "Triage". In particular years, some estates have been known to ask the curers to mark the whole or a major proportion of their coffee as "O" and in other years "A". Thus the grade designations are changed from year to year.

In Virudhunagar, Dindigul, Mettupalaiyam and Chikmagalur "Plantation" coffee is seldom graded into the above mentioned sizes. The commission agents in these places get the coffee hand-sieved and garbled and a sort of sizing is done. The Palni crop is usually not graded. "Peaberry" and "Blacks" are picked out and the rest is sold as "Assortment".

Estate marks.—The "Estate marks" are not registered under any law. Some of them are registered with the Chambers of Commerce but this does not prevent their infringement. In the United Kingdom some of these fetch a considerable premium over average prices. The reputation of certain "Estate marks" is high in the London market. It is said that in at least one instance the trade in London mistook a consignment for a well-known "Estate mark" and offered high prices for it after seeing the sample. Later on learning that it was not the mark they took it for, the price suddenly dropped. This example serves to indicate a lack of confidence in the judgment of the sample and a rather ignorant dependence on names. It is not surprising that this is sometimes exploited and estate names put on coffees which come from other parts.

It is stated that certain estates whose marks have a higher reputation than other estates permit the use of such marks by others. It is further alleged that some of the exporters violate the "Estate marks" by shipping inferior coffee under well-known marks. To protect themselves they purchase a small quantity of coffee bearing such "Estate marks". The planters who have well-established "Estate marks" as a rule ship only their top grades under the mark in order to maintain their reputation. Of late the complaint of infringement of "Estate marks" has become more general. The identity of these "Estate marks" is apparently maintained only as far as Mincing Lane and then the coffee of individual marks is blended with other coffees before being distributed to retailers.

(b) "*Cherry*" (*Native*) *coffee*.—Grading of "Cherry" coffee is more rudimentary than "Plantation". "Peaberry", "Bold" and "Blacks and Bits" are generally the only grade terms used. The grades and grade designations used in the internal markets are different from those employed for export trade. Even in the internal markets the grades vary from place to place. (Plate facing page 185 shows the *robusta* and *arabica* "Cherry" coffee).

In Mangalore "Cherry" coffee is graded only on demand by the trade. For internal distribution the "Blacks and Bits" are picked out and the remainder

sold as "Assortment". The practice of picking out "Peaberry" and "Blacks and Bits" from the "Assortment" is also not uncommon. Tellicherry follows almost the same practice as Mangalore. The shipments sent to Coimbatore from Calicut are graded into "A", "B", "C", "Peaberry" and "Triage" but those sent to Mangalore are not graded only the "Blacks and Bits" and "Peaberry" are separated. In the other markets, only "Peaberry" and "Blacks and Bits" are picked out. The necessity for standardising the grades of "Cherry" coffee is, therefore, much greater than in the case of "Plantation" coffee.

For purposes of export different grade names are used. "Native Bold A", "Malabar Native First and Second", "Basanally", "Browns", "Bits", "Blacks" and "Triage" are some of the grade names in use. No definite standards are fixed for these grades. "Native Bold A" is usually bigger than "A". It approximates to Coimbatore "O" and should stand on 7 millimetres gauge. "Malabar Native First" normally contains about 5 to 6 per cent "Triage" and "Second" about 15 to 20 per cent. They consist of small "A" and "B". An assortment of "A", "B" and "C" out of which about 30 per cent of "A's" have been abstracted is put on the market as "Basanally". About 2 per cent "Triage" is allowed in "Basanally", but it should not contain "Blacks and Bits". Here again the practice varies from shipper to shipper. Plates facing page 181 and this page show the Coorg and Mysore *arabica* grades.

"Monsooned" coffee.—There is practically no internal demand for "monsooned" coffee. It is exported under different grade designations as "Monsooned Native AA", "Malabar Native AA" and "Monsooned Basanally" (see plate facing page 185). The size of these different grades varies from shipper to shipper.

Estate pounded.—It is not graded but marketed in one lot as an inclusive "Assortment".

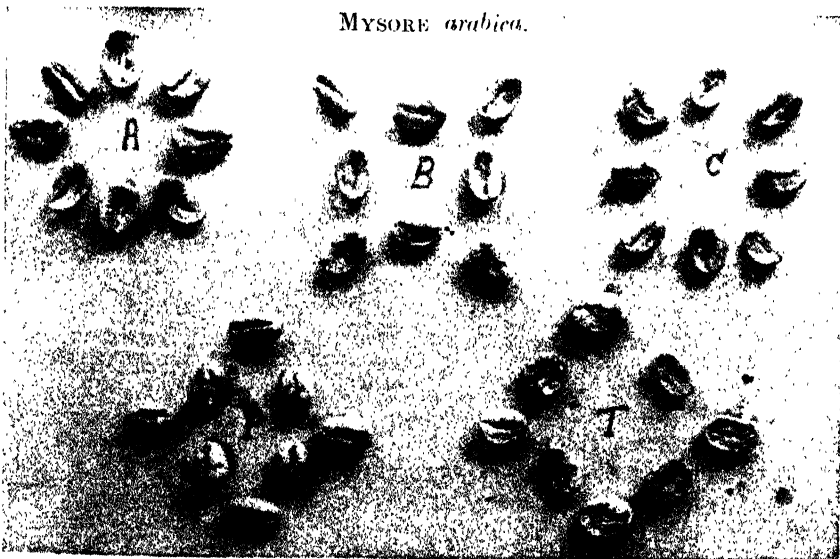
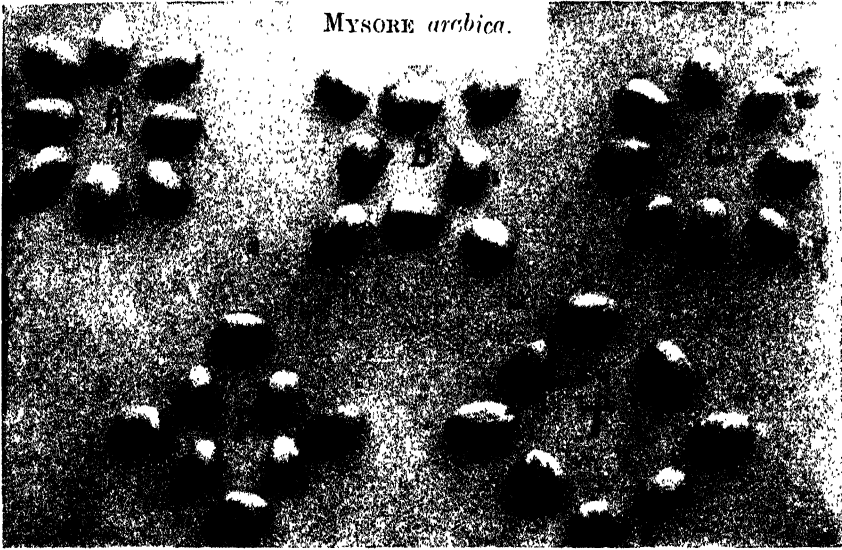
(c) *Robusta.*—"Peaberry" and in several cases "Blacks and Bits" are picked out and the rest sold as an "Assortment". In the case of estate pounded *robusta* the entire lot including "Peaberry" and "Blacks and Bits" is marketed in "Assortment" form.

(2) ROASTED BEANS.

The trade in roasted beans is small, the quantity sold being only about 600 cwt. annually. The trade descriptions under which the roasted beans are marketed are as numerous as in the case of raw beans. The first size goes under the descriptions of "Flat No. 1", "Flat OO", "A", "O", "OO", "Royal Extra Bold", "Extra Bold", "Bold", etc.

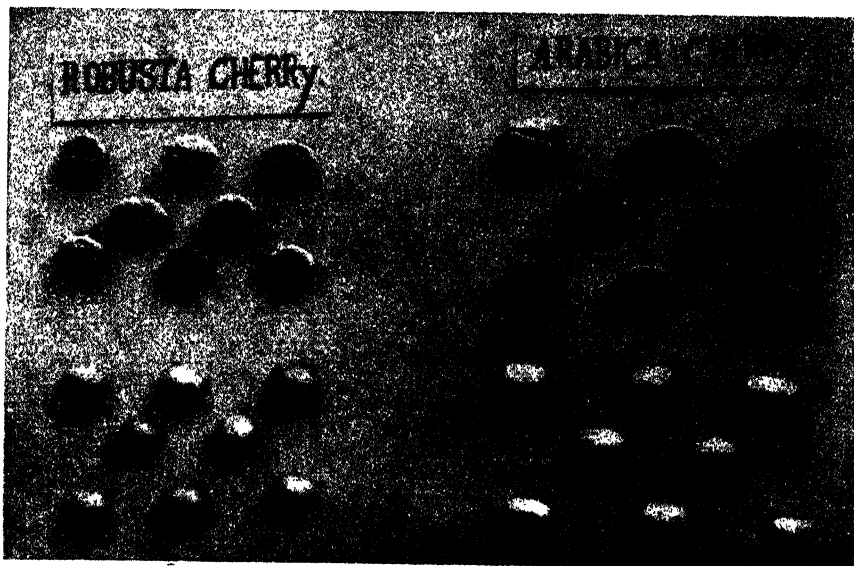
About 70 samples were examined for composition of different grades, appearance and colour of roast and evenness. Appendix XXXIII gives the results of analysis of roasted beans in regard to the proportion of different grades and weight of 1,000 beans. It was found that a sample of No. 1 size contained as much as 6 per cent "Triage", the average in the 1st size being 2.1 per cent. A sample of 2nd size had as much as 20.6 per cent "Triage", the average being 7.5 per cent. A sample of "Peaberry" was found to have 25 per cent "Flats", the average being 2.8 per cent.

The roast in the case of many samples was uneven. Out of 67 samples 8 were found to be roasted very unevenly and about 10 were more or less uneven. About 32 samples were found to be evenly roasted. 10 samples out



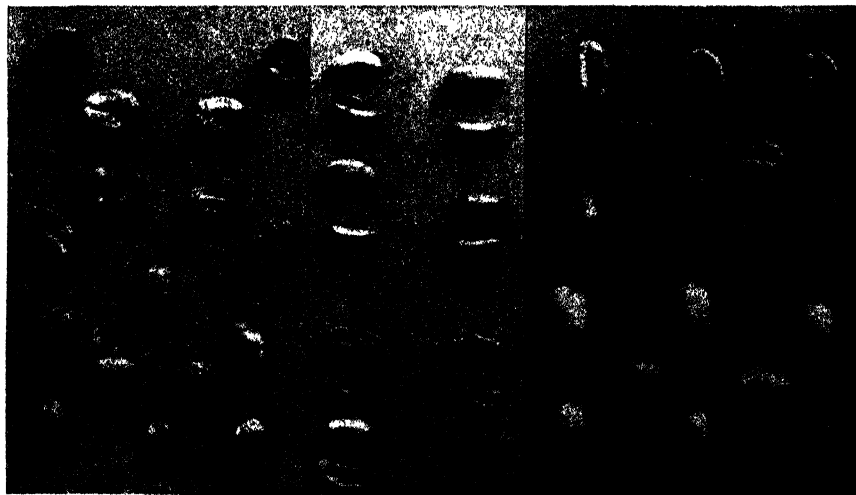
MYSORE *arabica* COFFEE.

A	.	.	.	GRADE "A"	P	.	.	.	"PEABERRY"
B	.	.	.	"B"	T	.	.	.	"TRIAGE"
C	.	.	.	"C"					



Robusta "CHERRY" COFFEE

Arabica "CHERRY" COFFEE



"BLACKS AND BITS"

MONSOONED "AA"

of another 67 were very lightly roasted, 23 were of medium roast and 34 heavily roasted, i.e., roasted to dark brown colour. The dark brown roast seemed to be the most popular.

The necessity of having standard grades and grade names for roasted beans is, therefore, as great as for raw beans.

(3) GROUND COFFEE IN PACKAGES.

With the excellent quality of coffee produced in India it should be possible to place before the consumer attractive and superior blends of packed coffee. Increased consumption is only possible by building up a reputation for quality packages and improving the value offered to the consumer. For finding out the quality of tinned coffee, samples were drawn from all parts of the country and were examined for the following factors :—

- (a) Size of particles.
- (b) Colour.
- (c) Percentage of admixture.
- (d) Liquoring test on the basis of Kenya score card.
- (e) Nitrogen.
- (f) Fat.
- (g) Ash, its solubility and colour.
- (h) Colour of liquor.
- (i) Total acidity.

A good many of the samples were found to be unfit for sale and consumption as coffee due primarily to the abnormally high percentage of adulterants and poor packing. If a "drink more coffee" campaign is to secure any response, it would be necessary as a preliminary step to evolve better standards for ground coffee. It would not be enough if one or two brands keep to a high standard. Common and uniform action by the manufacturers for fixing and following certain standards can alone improve the situation. It is in the interests of the manufacturers themselves to improve the quality and establish a reputation for their coffee as this would eventually give them a larger market by ousting imported brands and popularising the use of coffee generally. More than 50 per cent of the samples were found to be mixed with substances other than coffee. About 70 per cent of those were marked as containing pure coffee and there was no declaration on the label to indicate that it consisted of an admixture. The degree of adulteration ranged from 0.35 per cent to 98.2 per cent. The liquoring quality of these was naturally very poor. Less than 5 per cent of the samples were found to be of first quality as regards cup test and less than half of these were Indian coffees, the others being imported brands. About 20 per cent of the samples were considered to be so inferior that they did not earn any points in the liquoring test. More than 60 per cent were of poor cup quality. This seems to be a very unfortunate state of affairs. High class ground coffees should be clearly distinguished and marked preferably with the AGMARK to distinguish them from the cheaper classes of coffee for which no doubt a market also exists. At the same time, where the consumer desires coffee mixed with say, chicory, the mixture should be marked as such and show the proportion in which the produce other than coffee is present.

That it is in the interest of trade to have uniform specifications for ground coffee has been already made clear.

The analysis of samples collected in the course of the marketing survey (see Appendix XXXII) showed that liquoring quality was correlated to the size of particles of ground coffee. It was also observed that the finer the grind, the poorer the liquoring quality. The "Superfine" grade of pure coffee had about 88 per cent of the grind standing on sieves of 40 meshes to the inch, of which more than 50 per cent of the total stood on sieves of 20 meshes per inch. While the coffees classed Fine/Good had 77 per cent, standing on 40 meshes per inch of which only 17 per cent of the total stood on meshes of 20 per inch. The "Pure" coffees, on the whole, were more coarsely ground, having more than 75 per cent standing on 40 meshes per inch. It would appear that the flavour of coffee is retained better in coarse than in finer grinds.

The adulterated coffees were ground finer most probably in order that the adulterant may get well mixed up with coffee. It was observed that more than 35 per cent of the grind passed through 40 meshes per inch. Coffee mixed with more than 50 per cent chicory had nearly 50 per cent passing through sieves of 40 meshes per inch.

(a) *Nitrogen content.*—It was observed in the course of the analysis that samples mixed with chicory had a low nitrogen value, ranging from 0.85 to 2.1 per cent according to the degree of admixture while samples of pure coffee and those adulterated with other vegetable matter had a nitrogen value varying from 2.36 to 6.10 per cent. Hence in the draft grade specification (see Appendix XXXVII) the nitrogen content is stipulated to be from 2.0 to 2.75 per cent.

(b) *Ash content.*—The ash content of samples with a high percentage of chicory ranged from 6 per cent to 10 per cent and the pure samples had ash contents ranging from 3.75 to 5 per cent. The ash of all adulterated samples was coloured, being brown in the case of chicory and different shades of ash in other cases. The ash of pure coffee was feathery white or bluish white and was completely soluble in dilute HCl while the ash of adulterated coffee is only slightly soluble.

Regarding the possibility of *robusta* satisfying the specifications regarding size of particles, etc., it may not pass the acidity test and *robusta* would automatically be ruled out of "Superfine", "Fine", and "Good" grades. It appears that *robusta* could be spotted by determination of caffeine and chologenic acid by use of spectroscopy. This method of distinction is being further examined.

(c) *Packing.*—The flavour of coffee is evanescent. 50 per cent of the flavour is lost a week after roasting. The rate of loss is lower after this. Ten days after roasting it starts getting stale and reaches 75 per cent of the maximum staleness within 15 days. Paper bags, cartons, screw-top cans and sealed tins are not a protection as coffee deteriorates inside these containers almost as quickly as if left in the open. To keep the flavour of ground coffee intact till it reaches the consumer, it is not sufficient to pack the coffee in airtight tins "as the amount of oxygen contained in the trapped air is sufficient to oxidise the coffee causing staleness within a week."

The inert gas process of CO₂ packing is said to give the best results. The tins are exhausted under vacuum and CO₂ inserted. CO₂ gas replaces the oxygen in the tin and impregnates the cells of the coffee particles. The practice of packing ground coffee in inert gas must accordingly be adopted in conjunction with any system of grading prepacked ground coffee.

(4) ADMIXTURE OF GRADES.

The analyses of samples drawn from different parts of the country indicate a considerable admixture of grades. Some of the samples drawn from Northern India showed the position to be much worse than in the South. Manipulation and mixing of sizes seems a very common practice even in the heart of the coffee producing and curing areas as is indicated by the following :—

Trade description under which the coffee was offered.	Composition. (Percentage).		
	" A."	" B."	" C."
Anaimalai—" A "	1.7	94.7	4.6
Nilgiri—" OO "	9.4	89.8	0.8
Nilgiri—" A "	0.8	95.5	4.7
Nilgiri—" A "	<i>Nil.</i>	93.2	6.8
Shevaroy—" A "	40.0	56.7	3.3
Mysore—" A "	48.2	51.0	0.8

When such violent departures from the commonly understood trade descriptions are possible in and near the curing centres, the position farther away naturally becomes worse.

The samples drawn from Northern India and Burma were a hopeless mixture of different sizes. The quantity of "Triage" in samples of "A" Flats ranged from 29.8 per cent to 44.8 per cent in some of the typical samples collected from the Punjab. It ranged from 2 per cent to 44.4 per cent in Sind, 0.2 per cent to 25 per cent in Bengal, 0.2 per cent to 43.3 per cent in Madras, 0.1 per cent to 41.2 per cent in Bombay, 33.2 per cent to 54.3 per cent in Assam, 2.1 per cent to 57.5 per cent in Hyderabad (Deccan) and 6.2 to 43.3 per cent in Burma.

A number of commercial samples of raw beans were collected from trade sources and analysed according to type and size and the results are given in Appendix XXXIV. The analysis of "A" grade samples may be summarised as follows :—

Proportion of different Grades in "A".
(Percentage).

—	" A " or " O."	" B."	" C."	Below " C."	" Pb."	" Triage."
Nilgiri . .	58.01	39.42	0.88	0.15	0.68	0.86
Shevaroy . .	45.47	51.92	0.58	<i>Nil.</i>	0.38	1.65
Mysore . .	85.9	13.3	<i>Nil.</i>	<i>Nil.</i>	<i>Nil.</i>	0.8
Coorg . .	67.45	31.4	0.35	<i>Nil.</i>	0.5	0.3
High Range . .	3.62	82.88	7.68	0.73	5.23	0.46
Chikmagalur . .	57.28	42.0	0.17	<i>Nil.</i>	0.30	0.25
Palni . .	28.3	55.2	7.03	1.93	2.27	5.27

The samples were drawn from different markets and it is possible that there may have been some admixture. Mysore had the highest percentage

of "A", i.e., 85.9 per cent but this is based on the analysis of only one sample known to be real Mysore; Coorg came next and then Nilgiris but only two samples of each known to be true to name were analysed. Palni had the poorest average. There was a small quantity of "C" and "Triage" and "Peaberry" in the first grades. The maximum "C" was in "High Range" coffee and "Triage" in Palni. Further investigations were made at the curing centres. A sample of "A" in Mangalore showed 40 per cent on a 7 millimetres sieve, 40 per cent on 6.75 and 20 per cent through this. The analysis of "B" grade showed that 50 per cent stood on a sieve of 6.75 millimetres and roughly 50 per cent passed through, standing on a "C" sieve of 5.5 millimetres. A sample of Coimbatore "A" showed that 5 per cent stood on 7 millimetres, 80 per cent on 6.75 millimetres, and 15 per cent through this.

As already explained the grades and grade names are by no means uniform even among the curers. Further down the scale the position deteriorates. The trade in general and consumers, excepting the curers and a few other big exporters, attach little or no significance to the grade designations. In the circumstances, it is difficult to expand and capture new markets to enable the producer to get a better return. It is impossible for buyers even in India to be able to compare prices of different sellers owing to this form of unfair competition whereby the quotation is made nominally for a top grade and coffee even worse than the bottom grade is actually delivered. Unfortunately the buyers are often not sufficiently well acquainted with the trade practices to protect themselves. There is, therefore, need for the universal application of well recognised standard grades if the trade is to develop and expand on a proper basis.

(5) MIXTURE OF COFFEE WITH OTHER PRODUCTS.

For getting what the consumers consider better liquor, the practice of adding different mixtures is followed in many parts. In Gujarat and Maharashtra it is usual to add finely pounded cardamom to the liquor. In North Malabar a small proportion of roasted and ground Fengarek Menthya (*Trigonella Foenum Gracum*) is added to the coffee powder. In Cochin and Travancore States and in Malabar, coriander is often mixed with coffee in some of the hotels and houses. In Coorg the poorer classes add 30 to 50 per cent coriander to the coffee.

Where it is clearly shown that consumers in a particular area have an express desire for coffee with special flavours, there might be some scope for packing such special coffees provided the nature and amount of the added product is specified on the container. As a rule, however, such flavours can be readily added in the process of boiling and preparing the coffee liquor.

(6) GRADING IN OTHER COUNTRIES.

(a) *Brazil*.—The largest coffee producing country divides all coffees into 8 or 9 types according to the number of imperfections in an average sample of a definite weight. The better grades have the least number of defects. There are intermediate classifications between each standard type on the basis of size, i.e., "smalls", "medium", "large", etc. No. 1 grade is perfect coffee which cannot be had in the market. No. 2 may have four imperfections, No. 3 twelve and so on. No. 8 can thus have 360 imperfections. The main imperfection is the black bean and a table of equivalents is used which places a rating on other imperfections in comparison with the black bean.

(b) *Colombia*.—In 1931 efforts were made by the National Government to standardise quality. The National Federation of coffee growers was entrusted with the task of classifying the different coffees indicating their character, etc. Coffees are called after the names of the chief marketing centres where they are sold and each of these is further sub-divided into grades on the basis of size. The inspectors at the ports are vested with authority to check the correctness of the grades.

(c) *Costa Rica*.—The factories in Costa Rica engaged in curing and grading coffee handle the crop from a large acreage which according to a report of the Imperial Economic Committee facilitates the employment of more elaborate methods of machinery and the extraction of a larger number of grades. The coffee is graded on the basis of gravity in the washing channels which separate the heavier beans from the lighter ones. Each of the sizes "A", "B" and "C" is further sub-divided into classes to provide for the retention of the best beans in the top grades.

(d) *East Africa*.—Much the same method as in India is followed in East Africa. According to a report of the Imperial Economic Committee the practice of altering the size of the sieves from year to year and even in a single season exists in Kenya. "When coffee is on the small size, small sieves are inserted to retain a more or less definite proportion of 'A', 'B', 'C', etc."

In Tanganyika territory, *robusta* is classified into two divisions, (1) good average quality and (2) fair average quality. The good average quality should not contain more than 10 per cent by weight of defective beans and 6 per cent numerically of black beans and 1 per cent by weight of beans which are defective by reason of not conforming to the description.

E.—Suggestions for standardisation and grading.

(1) RAW BEANS.

The sooner the problem of standardisation both of bean and ground coffee is tackled the better for the producers and the trade. Some of the leading curers and manufacturers have evolved certain grades which could form the basis of a standard system of classification and grading. It is essential to consolidate, improve and systematise the present methods at an early date.

This would prevent coffees of varying qualities being sold under one general term, thereby pulling down the reputation of better grades. If standard grades are established the trade in general, the retailer, and, above all, the consumer would learn to associate quality with specific grade names which would eventually protect and enhance the price of the superior grades. A uniform system of standards prescribed under the Agricultural Produce (Grading and Marking) Act, 1937, and a strict supervision and control of the operation of the rules enforcing the grade standards, would stimulate the demand both at home and abroad, particularly in markets outside the United Kingdom. A better system of market news service and a more rapid expansion of the markets should follow the standardisation of grades. It would facilitate big bulk purchase being made at one time and the buyer would be confident of the uniformity of the general standard.

The following suggestions relate mainly to *arabica* "Parchment" coffee but the possibilities of bulking lower types of Indian coffee also need further investigation.

In consultation with the trade, grade specifications have been drawn up for *arabica* "Plantation" coffee as shown in Appendix XXXV. The specifications are to apply to the following district types :—

Mysore.
Coorg.
Nilgiris.
Billigirirangan.
Naidubattam (Naduvattam or Nilgiri/Wynaad).
Shevaroyas.
Anaimalais.
Nelliampathis.
Kannan Devan.
Malabar/Wynaad.
Palnis.
Indian "Plantation".

Blends of different types will come under Indian "Plantation" coffee. The grade designations indicating the quality of coffee consist of the following :—

1. AGMARK "O."
2. AGMARK "A."
3. COIMBATORE "A"
4. AGMARK "B."
5. AGMARK "C."
6. AGMARK "Peaberry."

"O" should have at least 70 per cent standing on a 7.0 millimetre sieve, "A" 70 per cent on 6.65 millimetres sieve, and Coimbatore "A" 70 per cent on 6.50 millimetres sieve. "B" should have at least 60 per cent on 6.0 millimetres sieve and "C" would be anything smaller than "B". "O" is to be dressed by removing "Peaberry", "Elephants" and beans corresponding with "A", "B", "C" grades from the natural "Assortment" of the beans as grown. "A" should have at least 25 per cent "O". The blemishes are not to exceed a combined total of 5 per cent with a maximum of 3 per cent in respect of any one defect, *viz.*, pale, foxy, broken, spotted, withered, "elephant" or otherwise defective beans.

The sieve sheets used for determining the size should not exceed 1/16th in thickness and the spacing of the holes shall be between 7 millimetres and 12 millimetres centres. The beans are not to be artificially polished and are to be free from any colouring matter.

The above grade specifications should, if adopted by trade, enhance the reputation of Indian coffee and help quality sales and quality production.

The need for standardising "Cherry" (Native) coffee is greater as the present practice of mixing and selling different grades of such coffee is detrimental to quality production and distribution. It should be easier to standardise the grades of "Cherry" coffee as it is sold mostly on the basis of appearance. Other factors such as colour and district types do not enter into the grading of "Cherry" coffee. Grading of cherry on the basis of size with a provision for prohibiting polishing and colouring would answer the purpose.

The sizes adopted for "Plantation" coffee could be readily applied to "Cherry" coffee as well.

(2) ROASTED BEANS.

The necessity of standard grades for roasted beans has already been discussed. The draft grade specifications given in Appendix XXXVI offer a basis for discussion by trade. The "O", "A", "B", "C" and "Peaberry" grades of raw beans are designated "Extra large Flats", "Large Flats", "Small Flats" and AGMARK "Peaberry", respectively. All the beans are to be roasted to the same degree of colour, packed in new tins from which the air has been exhausted under vacuum and replaced by inert gas. The description light roast or dark roast may be applied along with the grade designation to roast coffee of a brown or a very dark brown colour respectively.

(3) GROUND COFFEE IN PACKAGES.

That it is in the interests of trade to have uniform specifications for ground coffee has already been made clear. Appendix XXXVII gives the suggested draft grade specifications for pure *arabica* ground coffee in packages. Three grades, viz., (1) Special, (2) Coarse ground, (3) Fine ground are suggested.

Special.—80 per cent of coffee powder standing on a sieve having 40 meshes per linear inch with a minimum of 40 per cent standing on a 20 meshes sieve having 20 per cent acidity is to be classed as "Special". Some of the trade representatives felt that the term "Special" may lead the consumers to think that it is coffee of a higher quality while the division is based on the size of the grind.

It has been observed that the larger sized granules help to keep the flavour of coffee better than finely ground coffee. Further for preparing coffee by the percolation method coarse ground is more suitable.

Coarse ground.—In respect of coarse ground coffee 80 per cent of the powder should stand on a sieve having 80 meshes to the linear inch, with 17·8 per cent acidity.

Fine ground.—"Fine" ground coffee should have at least 60 per cent standing on 40 meshes per inch with 15 per cent acidity.

Classification, grading and standardisation.]

INTER-CHAPTER SIX.

It is acknowledged that India produces some of the best coffees in the world. Classification and grading and systematic sales on the basis of grades ensure a premium on quality which ultimately stimulates quality production.

Owing to confusing classification, multiplicity of grades, grade names and admixture of grades, the price quotations at present obtaining are of little commercial value. Excepting for the curers and a few big exporters, the trade in general and consumers attach little or no significance to the grade names. In the circumstances, it is difficult to expand and capture new markets to enable the producer to get a better return. It is impossible for buyers even in India to be able to compare the prices of different sellers owing to this form of unfair competition whereby the quotation is made nominally for a top grade and coffee even worse than the bottom grade is actually delivered. Unfortunately the buyers are often not sufficiently well acquainted with the trade practices to protect themselves.

The terms used to denote the various commercial types of coffee in trade parlance are different in different centres. They are generally understood by the shippers and the importers in the United Kingdom to which most of these types are at present exported. To buyers in other countries, however, with which India might hope to develop direct trade, they are not familiar. In the North, the terms Mysore or Nilgiri coffee carry little or no meaning. Coffee is not even classified into plantation or cherry. This indicates the need of some simplified and clearly defined form of classification which might be readily understood by any intelligent retailer or consumer interested in buying Indian coffee.

The factors that constitute quality are complex as coffee from different centres varies in the bean, roast and the cup. In spite of the close scientific investigation that has been carried on for years, reliable tests of quality have yet to be evolved. The most commonly used is the liquoring test but it cannot be called scientific as it is liable to vary considerably with the person, place and time and the water used. It is, however, the best commercial test for all purposes and is most widely used for valuing coffee, though in India it is practically unknown.

As competition is getting keener there is need for a closer study in India of liquoring quality in relation to other factors such as district, size of beans, type, variety, etc. A

recent examination of samples drawn from top grades of consignments shipped to England showed that due discrimination is not being observed in regard to this factor and some coffees of inferior liquoring quality are being shipped. The loss to the producer on such consignments could be avoided if the coffee were submitted to a qualified taster in India.

Quality is generally judged in respect of (1) size, (2) shape and evenness (3) colour, (4) natural test weight and (5) liquoring quality.

Size by itself cannot be taken as the index of quality. The larger beans may generally be good in quality but the "Elephant" beans or beans of abnormal size of different varieties are considered as inferior. Grading in India is at present done mainly on size basis by means of sizer gauges. Indian and Continental buyers generally look for bold sized beans and their preference for this type of bean can only be disregarded at the expense of price. Mixing of grades, indifferent grading and want of standardised size grading give rise to unevenness of the beans. An even size of bean gives an even uniform roast and must therefore constitute an important quality factor. Pale, dark spotted, brown and foxy coloured beans in any class of coffee render it definitely inferior. As a rule, a fine bluish tint is preferred to a dull grey colour but there is a good deal of overlapping in the intervening shades.

The specific gravity of the bean is a fairly reliable index of quality and is perhaps the best numerical index we have at present of the quality of coffee. The trade, however, has not so far accepted this principle although in the case of Costa Rica which is India's chief competitor, the beans are naturally sorted out in the washing channels by gravity into certain classes which are further sub-divided into grades.

The lighter the beans, the poorer is the roast. A mature bean is heavier than an unmaturing one. Better samples of coffee have generally a higher natural test weight and the trade recognises that the higher the bushel weight of raw beans, the better the coffee. As a matter of fact, the weight of the beans as indicated by the number of beans required to make up 8 oz. or the weight of 1,000 beans gives a better index of quality than bushel weight.

There is little uniformity in the methods and processes employed for grading and marking in the different curing centres. "Plantation" coffee is sorted out into "O" or "A", "B", "C", "Peaberry", "Triage" and "Black and Bits." There is a widespread tendency to increase the proportion of

“ A ” size in the sample. This is done by lowering the size limits for “ A ” or mixing more “ B ” with the “ A ”. Exporters and other dealers who buy from the curers for sale on the Indian market do their own bit of “ mixing ” of grade sizes as well as adding “ Triage ”.

The percentage of grades obtained in an outturn depends not only on the size of the slots, but also on the rate of the feed, speed of movement and the angle of incline of the sizer sheets. The proportion of the different grades extracted from the bulk is, therefore, capable of manipulation.

The sizer gauges in themselves show considerable variation from curer to curer (see table on page 182). The present size grades are just what the individual curer or merchant wishes to make them. Multiplicity of grade names and grade specifications complicate the position further and there is much need for a general agreement in the trade in respect of the grade names applicable to different sizes.

“ Pale ”, “ foxy ”, defectively shaped, broken and black spotted beans, and elephants are garbled and hand-picked and are classed as “ Triage ”. The black beans and the small tiny bits are further sorted out into what are called “ Blacks and Bits ”.

The “ Estate marks ” are not registered under any law. Some of them are registered with the Chambers of Commerce but this does not prevent their infringement. It is not, therefore, surprising that these are sometimes exploited and estate names are put on coffees which come from other parts. It is also stated that certain estates whose marks have a higher reputation than other estates permit the use of such marks for a consideration. The identity of these “ Estate marks ” is apparently maintained only as far as Mincing Lane and then the coffee of individual marks is blended with other coffees before being distributed to retailers.

Grading of “ Cherry ” coffee is more rudimentary than “ Plantation ”. In Mangalore, “ Cherry ” coffee is graded only on demand by the trade. For internal distribution the “ Blacks and Bits ” are picked out and the remainder sold as “ Assortment ”.

There is practically no internal demand for “ monsooned ” coffee. Estate pounded cherry is not graded but marketed in one lot as an inclusive assortment. In the case of *robusta*, “ Peaberry ” and “ Blacks and Bits ” are picked out and the rest sold as an “ Assortment ”.

The trade in roasted beans is only about 600 cwt. annually. The trade description under which the roasted beans are marketed are as numerous as in the case of raw beans. A sample of No. 1 size contained as much as 6 per cent "Triage", the average content of beans of the 1st size being 2.1 per cent. The roast in the case of many samples was also uneven. The necessity of having standard grades and grade names for roasted beans is, therefore, as great as raw beans.

With the excellent quality of coffee produced in India it should be possible to place before the consumer attractive and superior brands of packed coffee. A number of samples were drawn from all parts of the country and were examined for finding out the quality of tinned coffee. A good many of the samples were found to be unfit for sale and consumption due primarily to the abnormally high percentage of adulterants and poor packing. About 70 per cent of the samples were marked as containing "pure" coffee and there was no declaration on the label to indicate that they consisted of an admixture. Less than 5 per cent of the samples were found to be of first quality as regards cup test and less than half of these were Indian coffees. High class ground coffee should be clearly distinguished and marked preferably with the AGMARK to distinguish it from the cheaper classes of coffee for which no doubt a market also exists. At the same time, where the consumer desires coffee mixed with, say, chicory, the mixture should be marked as such and should show the proportion in which substances other than coffee are present. The practice of packing ground coffee in inert gas must also be adopted in conjunction with any system of grading prepacked ground coffee.

For getting what the consumers consider better flavour the practice of adding different mixtures is followed in many parts. There might be some scope for packing such special coffees provided the nature and amount of the added product is specified on the container. As a rule, however, such flavours can be readily added in the process of boiling and preparing the coffee liquor.

The sooner the problem of standardisation both of beans and ground coffee is tackled the better for the producers and the trade. Some of the leading curers and manufacturers have evolved certain grades which could form the basis of a standard system of classification and grading. It is essential to consolidate, improve and systematise the present methods at an early date.

A uniform system of standards prescribed under the Agricultural Produce (Grading and Marking) Act, 1937, and a strict supervision and control of the operation of the rules enforcing the grade standards, would stimulate the demand both at home and abroad, particularly in markets outside the United Kingdom. A better system of market news service and a more rapid expansion of the markets should follow the standardisation of grades. It would facilitate big bulk purchase being made at one time and the buyer would be confident of the uniformity of the general standard.

The need for standardising "Cherry" (Native) coffee is even greater as the present practice of mixing and selling different grades of such coffee is detrimental to quality production and distribution. It should be easier to standardise the grades of "Cherry" coffee as it is sold mostly on the basis of appearance, and other factors such as colour and district types do not enter into the grading of "Cherry" coffee. Grading of cherry on the basis of size with a provision for prohibiting polishing and colouring would answer the purpose.

Three grades, *viz.*, (1) Special, (2) Coarse ground, and (3) Fine ground, are suggested for ground coffee in packages.

CHAPTER VII.—STORAGE AND STOCKS.

A.—Importance of storage.

The production of coffee is seasonal while the demand is spread over the year. It is, therefore, necessary to store coffee till it is required for consumption. The coffee bean has to be handled with considerable care even after it is fully prepared for the market. Excess humidity, dampness, exposure to sun, excessive drying and contact with articles which have a strong smell affect the quality of the bean and bring down its value. The problem of storage is accentuated by the setting in of the South West Monsoon towards the latter half of May on the plantations and in the curing and distributing centres of coffee like Mangalore, Calicut and Tellicherry. "Plantation" coffee kept over the monsoon loses colour and, unless care is taken, develops moulds. Consequently, the planters who sell their coffee in the above places try to dispose of their stocks before the end of May. Prices naturally show a tendency to fall during this period as explained in the chapter on Prices. The planter cannot afford to lock up his capital for too long a time and is, therefore, always anxious to sell as quickly as possible.

B.—Methods of storage.

Plantations.—The bigger planters do not generally keep any stocks of coffee on the plantations. They send "Plantation" and "Cherry" coffee to the curers after partial drying. The "Cherry" coffee pounded on the estate is also sent to the curer or sold locally almost immediately. The problem of storage of coffee, therefore, does not normally arise in the case of larger plantations. Sometimes however, the planters have to store coffee for a period of one to two weeks due to rainy weather which prevents despatch of coffee to curers. They have also to stock coffee till a sufficient quantity is accumulated for despatch. For this purpose they have usually *pucca* godowns with masonry walls and wooden, cemented or tiled flooring.

Some of the small growers retain stocks of coffee in one of the rooms in the dwelling house on the plantation. Others use gunny bags for storage or heap the coffee against the walls of a godown and cover it with mats. The godowns have usually masonry walls and mud floorings plastered with cow-dung.

Coffee is not retained for more than a month or so, as the small growers are always impecunious. The proportion of the crop held in stock by the big and small growers at the end of 3 months would not exceed one per cent. It is usually disposed of within that period.

Curing works.—The curing works in Mangalore, Tellicherry, Calicut, Coimbatore, Mysore and Hunsur receive about 220,000 cwt. of coffee during the season. As the curers in the above places are generally large buyers of coffee and, as they also act as agents to planters, they have usually large storage accommodation. The godowns are made of masonry with cement, mortar or brick flooring. Coffee is not stored in parchment or cherry form by the curers but is stored after curing in gunny bags. Sufficient room is left between each row for ventilation and handling coffee. The crop of each estate is kept separately, identification cards being displayed on each lot. Curers in Mangalore, Tellicherry and Calicut who have a branch in Coimbatore transfer the stocks of "Plantation" coffee held by them on their own or on behalf of their

constituents to Coimbatore before the advent of the monsoon in about the third or fourth week of May. But considerable quantities of "Cherry" coffee are stored in Mangalore until after the monsoon, either for "monsooning" or sale in the interior markets. Curers in Coimbatore, Mysore and Hunsur hold stocks of "Plantation" and "Cherry" coffee throughout the year.

The curers in Virudhunagar, Dindigul and Kannankurchi are also wholesale merchants dealing in coffee and as such, they have large *pucca* godowns made of bricks with cement or mortar flooring. Coffee is generally stored in gunny bags in parchment form and peeled when sold. Rice mills which peel "Parchment" coffee have small sheds with mud flooring for storing coffee.

In Mettupalaiyam most of the curers have godowns made of masonry and paved floorings. Coffee is usually stored in parchment form.

The curers in the above centres export or sell the coffee on behalf of the planters as and when it comes. They hold about 10 to 15 thousand cwt. of coffee in March and about 10,000 cwt. in May. By about October which is the beginning of the coffee season the stocks usually dwindle to about 5 to 6 thousand cwt.

Markets.—The wholesale merchants dealing in coffee in Mangalore, Tellicherry and Calicut have generally masonry godowns. But in some cases the flooring is dressed with cowdung. "Parchment" as well as "Cherry" coffee are seldom stored as such by the wholesale distributors at those centres. They are generally stored after curing. "Plantation" coffee stored during the monsoon in the above places is packed in double gunny bags and covered with straw and stacked in closed rooms which have no windows. This process of storing increases the chances of the beans getting mouldy. If coffee is exposed to the monsoon winds, the colour changes and brings down the value of the coffee, except in those markets where this type of coffee is specially appreciated. "Cherry" coffee is packed and stored in single bags. In Coimbatore the wholesale distributors generally store cured coffee in gunny bags in *pucca* godowns. In Mettupalaiyam the distributors generally stock coffee in parchment form in gunny bags in *pucca* godowns.

The Palni crop is usually stored in Virudhunagar and Dindigul in parchment form. The storage accommodation in Virudhunagar was found to be better than in other places. Masonry godowns with cement flooring having a capacity of about 3,000 cwt. are common. The wholesalers in Travancore have *pucca* godowns adjacent to their shops. In Cochin State coffee is stored along with provisions in the wholesaler's godowns.

Practically no stocks are held by wholesale merchants of coffee in Northern India as the turnover is small.

Retailers.—Retailers usually stock coffee in gunny bags or second hand kerosene tins. Some of them also use tea chests or deal wood boxes.

Factories.—The more important manufacturers purchase their requirements during the coffee season, i.e., from December to June and towards the end of the season (May) they have enough stock for the rest of the year. They have *pucca* damp-proof godowns, where coffee is stored in double gunny bags. The flooring is either cemented or tiled. The small manufacturers keep coffee in single bags in masonry godowns, the flooring being usually of mud, dressed with cowdung.

Ports.—Mangalore, Calicut and Tellicherry are the chief exporting ports. Transit sheds made of galvanised tin sheets in the port premises are ordinarily used for temporary storage purposes. Coffee is not stored for more than a

few hours in these godowns. In the rainy weather galvanised iron covered godowns are used for storing coffee before transshipment. In Bombay coffee is stored in port trust godowns having cement or concrete walls and cement or tiled flooring. The steamer agents in the above places have extensive *pucca* godowns where coffee is stored before being shipped.

C.—Cost of storage.

Plantations.—It has already been mentioned that the bigger planters keep very little coffee on plantations. The small grower who keeps coffee in bags pays about 3 annas for a second hand gunny bag. As about 3 bushels of coffee are kept in a bag the cost of storage works out to about 5 annas per cwt. of clean coffee.

Curing works.—The curers in Mangalore, Tellicherry, Calicut, Coimbatore, Mysore and Hunsur do not generally charge any godown rent for coffee kept during the coffee season by the planters in the curers' godowns. But it appears that the godown rent is included in the curing charges and therefore, the storage costs are really borne by the planters in the case of coffee handled by curers. In Mangalore some of the curers charge a godown rent of Re. 1 per 100 bags per month (3 pies per cwt.) for arrivals of coffee after June and for stocks remaining on planter's account after that season. In Coimbatore the curers charge Re. 1 per ton (9 pies per cwt.) a month for fire insurance in the case of stocks remaining with the curer on planter's account after 30th June. In the case of stocks transferred from Mangalore, Tellicherry and Calicut during the monsoon by the planters, the curers in Coimbatore charge a godown rent of Re. 1 per ton a month and also a fire insurance charge of Re. 1 per ton (about 1 anna 7 pies per cwt.). In some cases no godown rent is charged, but a charge of Rs. 1-4 per cent for fire insurance is made.

Markets.—The wholesalers in the distributing centres like Mangalore, Calicut and Coimbatore generally rent godowns in the bazár. The cost of storage in the above places varies according to the importance of the locality in which the godown is situated. In Mangalore, Tellicherry and Calicut the godown rent works out at about 2 annas per cwt. the godowns in Mangalore are generally insured, the charge being 4 annas per cent. In the case of stocks held by wholesalers acting as commission agents in Calicut a godown rent of 4 annas per ton or about 2 pies a cwt. a month is levied on the planters.

In Virudhunagar and Dindigul some of the wholesale distributors who are also curers charge 9 pies per cwt. from the planters for stocks kept for more than a month. The godowns are usually owned by the wholesalers in the above places.

In Travancore and Cochin States godowns having a capacity of 100 bags of $1\frac{1}{2}$ cwt. per bag can be rented at about Rs. 15 a month. The average cost of storage there works out to about $1\frac{1}{2}$ annas per cwt. a month. In Calcutta the commission agents charge a godown rent of about $1\frac{1}{4}$ annas per cwt. a month for stocking coffee and in Karachi about two annas per cwt. per month.

Factories.—The cost of storage in factories depends on the location of the factory. The manufacturers in Calcutta, Bombay and Coimbatore have their own buildings. The smaller manufacturers stock coffee in rented godowns, the cost of which works out to about one to three annas per cwt.

Ports.—The port trusts in Mangalore, Calicut and Tellicherry allow free storage for the first 24 hours. They charge a rent of 2 pies per bag (about 182 lb.) for 3 days, 4 pies per bag for 6 days and 6 pies per bag for 9 days. In Bombay free storage is allowed for the first week after which a charge of 4 annas per ton per day is levied.

Abroad.—Consignments shipped to London are stored in bonded warehouses. A rent of 12 annas and 9 pies per ton or about 10 pies per cwt. per month is levied. As coffee is bought outright by the buyers or brokers on the Continent, the shippers in India do not have to pay any godown charges in the Continental Countries.

D.—Finance of storage.

Some of the indigenous banks advance loans on stocks. About 65 to 70 per cent of the ruling price is usually advanced. The stocks are kept in the godown of the shippers or wholesale distributors under the custody of the banks. The godowns are usually sealed by the banks and when the shippers or wholesale distributors wish to garble or mix coffee before selling, the Banks employ a godown keeper who is paid for by the shipper. It is estimated that about 5 to 6 lakhs of rupees are normally advanced by banks.

E.—Losses in and effects of storage.

It is difficult to estimate the losses incurred in the storage of coffee. The location, duration and type of storage have a considerable bearing on the losses in storage.

“Plantation” coffee stored in gunny bags on the coast during the monsoon in places like Mangalore, Calicut and Tellicherry deteriorates in quality. It loses its original colour, gets whitish and may become mouldy and spotted resulting in a reduction of 25 to 30 per cent in value though there is an increase of from 4 to 5 per cent in weight. The planters who send their coffee to Mangalore, Calicut and Tellicherry for curing and marketing generally ship or sell the “Plantation” coffee locally before monsoon.

Coffee with normal moisture content stored in closed godowns in places which are not subject to the long monsoon as Coimbatore, Virudhunagar, Dindigul and Mettupalaiyam loses in weight from 1 to 2 per cent by diriage but the colour is not adversely affected.

As mentioned earlier in the chapter a good quantity of “Cherry” coffee is kept over the monsoon in Mangalore. It is necessary to spread this out once in a fortnight. Coffee stored for a month without being touched during the monsoon may be attacked with weevil and cases have been found where the estimated loss was as much as 15 per cent. Cleaned and cured coffee stored over long periods, i.e., more than 2 years appears to deteriorate in quality. It loses colour and becomes mouldy. Stored in parchment form, the coffee is preserved better. Most of the wholesalers in Virudhunagar, Mettupalaiyam and Dindigul store coffee in parchment form as the colour of the beans does not fade as fast as in the case of cleaned coffee. Further coffee in parchment form is not so liable to absorb strong smells or objectionable flavour as cleaned coffee. But coffee in parchment requires more storage space and the cost of transportation is more than for cleaned coffee.

In Northern India as coffee is very often stored with spices and condiments in the hands of retailers, it absorbs the strong smell of these commodities.

Bulk storage adopted by some of the small growers who pile coffee against the wall, leads to quicker deterioration as it is more exposed to atmospheric conditions than in bags. The price they get for such coffee is therefore, lower than for that stored in bags.

F.—Seasonal variations in stocks and carry-overs.

(1) SEASONAL VARIATIONS.

Information regarding the stock position in the different distributing centres is scanty. The Curers' Association's circular issued from Mangalore from January to May gives only the estimated stock of coffee with curers on planter's account at that centre. Elsewhere monthly statements of the estimated stock of coffee in the chief distributing centres are not issued by any responsible body.

The estimated stocks with the curers' or planters' account in Mangalore, Calicut, Tellicherry, Coimbatore, Mysore and Hunsur in 1938-39 were as under :—

[illegible]

The peak month was February. January was the next highest month followed by March and April. In September stocks touched the bottom. From June to October which are off-season months the stocks are below 1,000 cwt.

In Mangalore, Calicut and Tellicherry maximum stocks are held between January and May. The stocks in Virudhunagar which is one of the major distributing centres of coffee were as follows :—

Estimated stocks.

(1938.)										(Cwt.)
January	.	.	.	.	.	.	.	.	.	6,000
February	.	.	.	.	.	.	.	.	.	6,000
March	.	.	.	.	.	.	.	.	.	8,000
April	.	.	.	.	.	.	.	.	.	8,000
May	.	.	.	.	.	.	.	.	.	6,700
June	.	.	.	.	.	.	.	.	.	5,900
July	.	.	.	.	.	.	.	.	.	4,400
August	.	.	.	.	.	.	.	.	.	3,760
September	.	.	.	.	.	.	.	.	.	3,600
October	.	.	.	.	.	.	.	.	.	3,600
November	.	.	.	.	.	.	.	.	.	3,200
December	.	.	.	.	.	.	.	.	.	3,200

In Kannankurchi which is another distributing centre the stocks in 1939 were as follows :—

	(Cwt.)
January	600
February	2,100
March	1,600
April	740
May	740
June	740
July	640
August	1,000
September	600
October	700
November	300
December	420

The stocks are highest in February and lowest in November.

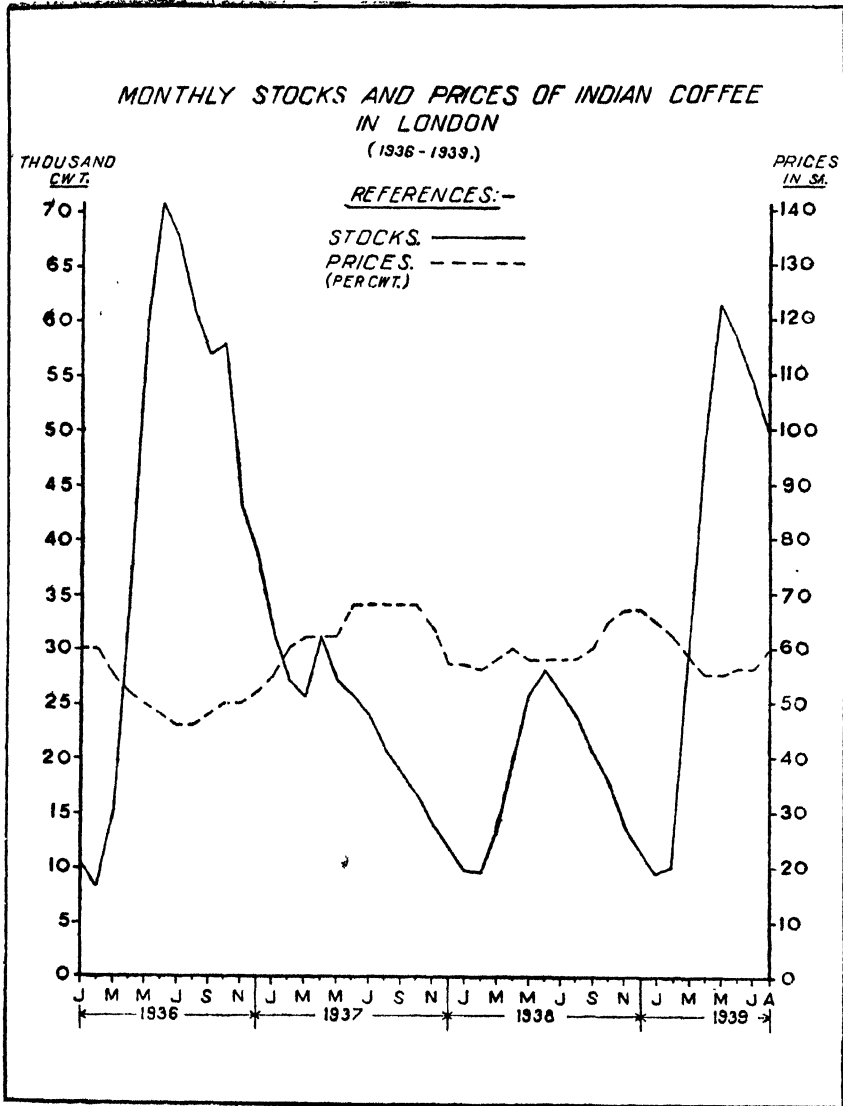
In Mysore, the stocks are at their highest in January, February and March during which period the bulk of the season's crop is being got ready for distribution. In Cochin and Travancore States the stocks are highest from December to March. In Nizam's Dominions the stock is highest from October to March. In Northern India the stocks are higher generally from October to April.

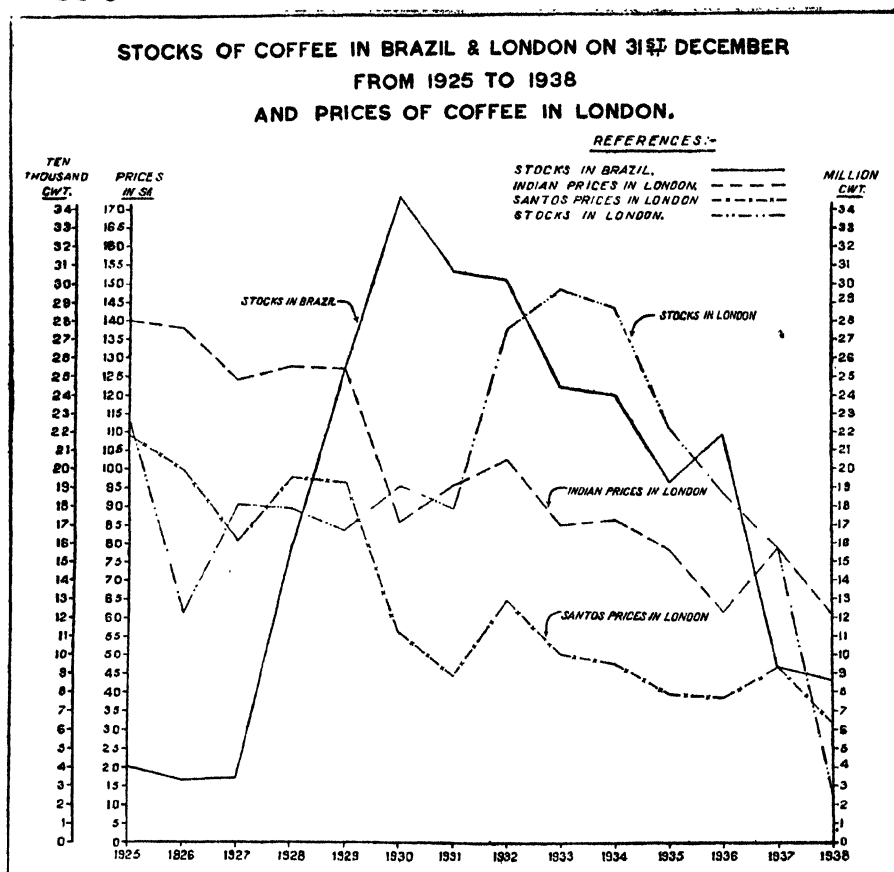
Does it pay to store coffee, and, if so, by how much and for how long, are questions which are of vital importance to the coffee industry. The movement of prices indicates that it pays to store coffee during the export off-season months, *i.e.*, from June to October. Diagram facing page 123 shows that there is a definite rise in prices in the internal markets like Coimbatore, Salem, and Mettupalaiyam. The cost of storage per month is estimated at about 1 to 2 annas per cwt. The interest charges amount to about 3 annas and 2 pies per cwt. The cost of transport and handling may amount to a maximum of Rs. 1-4 per cwt. But if the railways could find their way to give concession rates to those centres as in the case of transport of coffee from Mangalore to Tellicherry, the cost would be still further reduced. The highest prices are realised in those markets between July and October. A premium of 10 annas to Rs. 2-1 over the average price of the season is normally derived by the wholesale distributors for stocks sold between June and October. The cost of storage including transport would amount from 8 annas to about Rs. 1-8 per cwt. The margin to cover the price risk and interest on capital is not, therefore, very wide. But even this little margin could be of some benefit to the producers if the stocks were stored in the interior markets.

The diagrams facing page 123 and this page show that it is profitable to market Indian coffee in London from January to April and to sell it in India from May to October.

(2) CARRY-OVERS.

The carry-over by planters from one season to another is negligible. The annual carry-over by curers and merchants is estimated at about 110,000 cwt. which is nearly one fourth of the average net available supply of coffee in India. Of this quantity, the carry-over with manufacturers may be estimated





at about 10,000 cwt. The following were the estimated stocks in September 1936 at the chief centres of distribution :—

	(Cwt.)
Mangalore	20,000
Coimbatore	30,000
Virudhunagar	12,200
Dindigul	3,400
Kannankurchi	700
Shevaroy	2,000
Calicut	1,000
Tellicherry	1,000
Mysore	6,000
Other places	45,000
	121,300

More than 90 per cent of the stock carried over the season in Mangalore, Calicut and Tellicherry is "Cherry" coffee while more than 95 per cent of the stock on hand in Virudhunagar, Dindigul, Kannankurchi and Shevaroy is "Plantation" coffee.

In Northern Indian markets, the consumption being small the carry-over will be scarcely 5,000 cwt.

G.—World stocks and carry-overs.

(1) BRAZILIAN STOCKS.

The stocks of coffee in Brazil influence world prices in a large measure. The diagram facing this page shows the trend of stocks and prices from 1925 to 1938. In 1925 the stocks of Brazilian coffee were only about 4,000,000 (4 million) cwt. It shot up to 15,000,000 cwt. in 1928 and as a result, prices fell in 1929 and 1930 by about 50 per cent. Since 1932 there has been a gradual fall in carry-overs but still they are far above the needs of the situation. Large carry-overs result in lower prices. The stock shown in 1938 is only estimated stock of coffee in Brazilian ports.

(2) INDIAN STOCKS IN LONDON AND PRICES.

That prices of Indian coffee in London react to the stock of Indian coffee in that country is seen from the diagram facing this page. In May 1936 the stock of Indian coffee in London was at its highest and prices were at the lowest level. The stocks came down by March 1937 and prices improved. The trend of prices shows that the stock position is one of the factors that contribute to the fixing of prices of Indian coffee in London. Prices in 1937-38 were fairly high and the stocks were considerably down during that period.

Storage and stocks.]

INTER-CHAPTER SEVEN.

The coffee bean has to be handled with considerable care even after it is fully prepared for the market. Excess humidity, dampness, exposure to sun, excessive drying and contact with articles which have a strong smell affect the quality of the bean and bring down its value. The problem of storage is accentuated by the setting in of the South West Monsoon towards the latter half of May as exposure to the monsoon winds changes the colour of coffee and generally brings down its value.

Coffee is not retained for more than a month or so by the small growers as they are always impecunious. The proportion of the crop held in stock by the big and small growers at the end of 3 months would not exceed one per cent. It is usually disposed of within that period. Considerable quantities of "Cherry" coffee are, however, stored in Mangalore until after the monsoon, either for "monsooning" or sale in the interior markets. Curers in Coimbatore, Mysore and Hunsur hold stocks of "Plantation" and "Cherry" coffee throughout the year. Wholesale merchants of coffee in Northern India do not hold any stocks as the turnover is small. The more important manufacturers purchase their requirements during the coffee season *i.e.*, from December to June. Towards the end of the season (May) they have enough stocks for the rest of the year.

The curers in Mangalore, Tellicherry, Calicut, Coimbatore, Mysore and Hunsur do not generally charge any godown rent for coffee kept during the coffee season by the planters. It appears, however, that it is included in the curing charges so that the storage costs are really borne by the planters in the case of coffee handled by curers.

Consignments shipped to London are stored in bonded ware houses where no rent is charged for the first six weeks after landing. Later, a rent of 12 annas and 9 pies per ton per month is levied. As, however, coffee is bought outright by the buyers or brokers on the Continent, the shippers in India do not have to pay any godown charges in the Continental countries. Some of the indigenous banks advance loans on stocks. About 65 to 70 per cent of the ruling price is usually advanced and it is estimated that about 5 to 6 lakhs of rupees are normally advanced in this manner.

The location, duration and type of storage have a considerable bearing on the losses in storage. Coffee with normal

moisture content stored in closed godowns in places which are not subject to the long monsoon losses in weight from 1 to 2 per cent by driage but the colour is not adversely affected.

Information regarding the stock position in the different distributing centres is scanty. The peak month for estimated stocks held by the curers on planters' account in the different markets appears to be February. January is the next highest month followed by March and April. In September, stocks reach the bottom. From June to October, which are off-season months, the stocks in 1938-39 were below 1,000 cwt.

The highest prices are realised in markets like Coimbatore, Salem, Mettupalaiyam and Chikmagalur between July and October. A premium of 10 annas to Rs. 2-1 over the average price of the season is normally derived by the wholesale distributors for stocks sold between June and October. The cost of storage including transport would amount from 8 annas to about Rs. 1-8 per cwt. The margin to cover the price risk and interest on capital is not therefore very wide. But even this little margin could be of some benefit to the producers if stocks were stored in the interior markets.

The stocks of coffee in Brazil influence world prices in a large measure and prices of Indian coffee in London react to the stocks of Indian coffee held there. Price movements clearly show that the stock position is one of the factors that contribute to the fixing of prices of Indian coffee in London.

CHAPTER VII.—HANDLING AND TRANSPORTATION.

A.—Handling.

(1) ON THE PLANTATIONS.

Coffee is not handled in bulk except in the initial stages of preparation for the market. The crop despatched to the curers is measured in bushels, filled in bags, stitched and very often sealed to avoid theft on the way. One bag usually contains three bushels of coffee. The cost of filling and stitching is met by the planters. Generally, the curers do not charge anything for the bags, but in some cases the planters buy their own bags or the curers charge a hire of 3 pies per bag. Coffee sent to the commission agents is measured in bushels,* *marakkals*† or *kalam*‡ and put in bags (see plate facing page 209). The commission agents and itinerant merchants usually supply their own bags.

The charges for handling incurred by the planter at the plantation may be estimated at from 6 pies to 1 anna per cwt.

(2) AT THE ASSEMBLING AND DISTRIBUTING CENTRES AND RAILHEADS.

At the curing yards, coffee is measured in bushels to check the despatch figures given by the planter. It is then cured, graded and re-bagged. When shipped to United Kingdom, the Home mark and the grade names are also stencilled. Charges incurred in the course of curing, grading and transporting the coffee to auction rooms are included in the curing charges, but the cost of handling and packing (including stencilling on bags intended for export) which amounts to 6 to 8 annas per cwt. has to be met by the planter in addition to the curing charges. Coffee intended for shipment to foreign countries is packed in double gunnies—the inside ones normally weighing 1½ lb. and the outer ones 2 to 2½ lb. Each bag usually contains 182 lb. net. Coffee sold for distribution in India is packed in bags with a capacity of 182 lb. or 168 lb. or 110 lb. net. In the case of such coffee sold by the curer on f. o. r. terms, the planter has to meet handling charges amounting to 6 annas a cwt. including the cost of gunny bags.

The curers in Tellicherry send about 75 per cent of the coffee cured by them to their branches in Mangalore for sale by auction or private negotiation. In such cases, the planters have to pay, besides the usual curing charges, an extra charge of 6 annas per cwt. for packing, weighing and transport to railway station. From the railway station in Mangalore to the auction rooms, the handling charges amounting to 9 pies per cwt. are usually met by the curer out of the selling commission.

In Calicut, coffee lying unsold with the curers on the planters' account is either sent to Mangalore or Coimbatore. The planters in such cases have to pay the same handling charges as in the case of consignments transported from Tellicherry to Mangalore. The curers in Coimbatore charge 8 annas per cwt. for weighing, packing and handling coffee which is exported to foreign countries. "Cherry" coffee which generally comes clean from plantations is peeled and delivered to the buyer in his own bags. Planters are charged about 2 pies per bag for weighing and 4 pies per bag for stitching.

* 1 Bushel = 6 imperial gallons.

† 1 *Marakkal* = 250 fluid oz.

‡ *Kalam* = 3,000 fluid oz.

The commission agents in Calicut get the cured coffee in bags. The buyer has to pay for the bags but the planter is charged 2 pies per bag for handling. The commission agents in Chikmagalur also get the coffee in bags but they do not charge for handling or grading as they realise a bigger sales commission from the planters. The wholesalers who ship "Cherry" coffee to the Continent bulk it and then garble it according to their requirements. Sometimes, the graded "Plantation" coffee is bulked and garbled in order to turn out an extra 25 per cent, say, of "A" grade out of "B" and "B" out of "C", etc. Analysis of samples drawn from different parts of India indicated that some "Triage" is also mixed with "B" and "C" and sometimes with "A" too. Garbling normally costs about 4 to 6 annas a cwt. Bulking and weighing charges amount to 3 pies per cwt. and marking and stitching 2 pies per cwt.

Investigations in the course of the marketing survey showed that sometimes inferior polished "Cherry" is mixed, in varying proportions, with genuine *arabica* and sold as "Plantation" coffee in Coimbatore, Virudhunagar and other distributing centres. Some wholesale dealers mix coffee from different producing areas and call it Nilgiris or Bababudans or Malabar Native "AA" according to the demand for the various types. The cost of mixing the different kinds of coffee amounts to 6 pies to one anna per cwt. In Virudhunagar, inferior *robusta* from Travancore is mixed with superior *robusta*, or polished *robusta* is mixed with polished "Cherry." The handling charges for these do not normally exceed three to six pies per cwt.

Some distributors pack coffee for the retail trade in twill bags having a capacity of 7 lb. and 10 lb. net. The cloth bags are sealed, and often packed in an outer bag. The cost of these bags including sealing, etc., is included in the rates quoted to the trade.

Manufactured coffee is packed in tins which are repacked in wooden cases of different dimensions. For transportation by rail, raw coffee is packed in single or double bags and "Parchment" coffee in double bags. The bags are unloaded at the Railway sheds by coolies employed by the consignor, the cost of unloading varying at different stations from 4 annas to Rs. 1-8-0 per hundred bags. Coffee is usually loaded into wagons within twenty-four hours of its arrival at the shed. The charges for loading and unloading are included in the railway freight, and the labour employed for this purpose is paid by the railways.

The clearing and booking of consignments is carried out through station brokers or *dalals* on payment of a small fee of about 4 annas per consignment.

(3) AT RIVER GHATS.

Trade by inland waterways is confined to Travancore and Cochin States. The loading and unloading is usually done by coolies who charge about 3 pies per bag.

(4) AT PORTS.

Mangalore, Tellicherry, Calicut and Cochin are the chief exporting ports.

Shippers who buy from the curers bulk and garble coffee for manipulating grades and repack it in gunny bags or cases. Coffee is stored in the transit sheds of the port house. In Mangalore, cargo boats or lighters lie alongside the wharfs and coffee bags are put into them and carried to steamers lying about 3 to 4 miles out at sea. In Tellicherry and Calicut, loading from the pier into lighters and from the lighters into the steamers is carried out by cranes.

The port dues charged for export of coffee are as under :—

	Rs.	A.	P.	
Mangalore	0	10	0	per ton.
Calicut	0	7	6	„ „
Tellicherry	1	0	0	„ „

The handling charges in Mangalore including boat hire are about Rs. 2-5-0 per ton as shown below :—

	Rs.	A.	P.	
Stacking and loading into boats	0	8	0	per ton.
Boat hire	1	9	0	„ „
Customs duty, hire of tarpaulin and wages of Tally clerks	0	4	0	„ „
	2	5	0	

In rough weather, the charges are 50 per cent over the above rates. The handling charges in Calicut and Tellicherry amount to about Rs. 3 per ton.

(5) CONTAINERS.

It is vital that the qualitative characteristics of a certain grade of coffee are preserved during its transit. The smell of coffee, for example may be spoiled if suitable containers are not selected or if it is transported in bulk like other commodities such as wheat, linseed, etc. “ Parchment ” coffee, “ Cherry ” coffee and “ Cured ” coffee is transported in single gunny bags weighing about 2 to 2½ lb. “ Plantation ” coffee shipped to foreign countries is packed in double gunny bags. The inner bags weigh about 1¾ lb. (New Es) and the outer ones about 2 to 2½ lb. each (New Ls). Coffee from some plantations such as Naduvattam is packed in even heavier bags. Coffee is also packed for shipment in 56 lb. pockets, i.e., small single gunny bags. The consignments to Hamburg are sometimes packed in rectangular cases lined with paper and made of mango planks about ¾ inch thick capable of containing about 2 cwt. of coffee. Bags lined with paper have been used and not found successful when the coffee has to be rebulked at a later stage. Sometimes, coffee for retail sale in India is first packed in cloth bags of 7 lb. or 10 lb. net capacity and then repacked in gunny bags.

B.—Transportation.

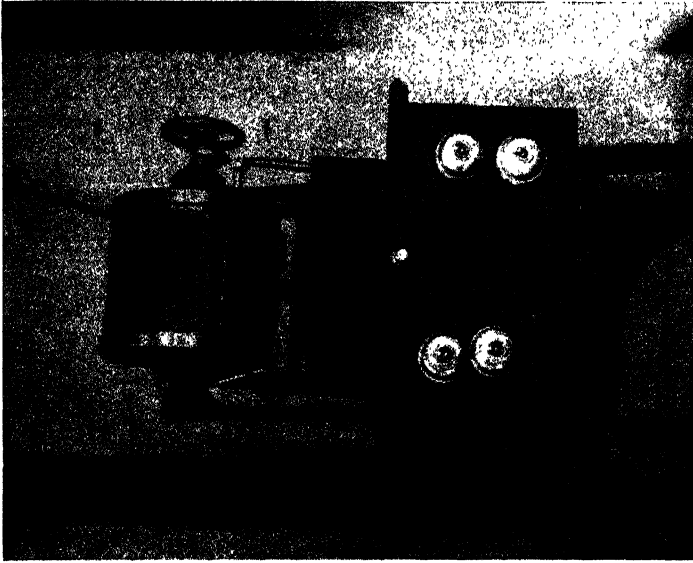
Coffee is transported by (1) road, (2) rail, (3) inland water-ways and (4) sea.

(1) BY ROAD.

(a) *Headload and pack animals*.—A good number of plantations do not have even *kachcha* (un-metalled) roads for transporting coffee. Most of the small plantations have only tracks winding in and out of the hills. The crop in such cases is carried by headloads, donkeys, pack ponies or bullocks. Human labour for headloads is used in the case of short distances only. Usually, pack animals carry the coffee to the nearest road from where it is loaded in lorries or bullock carts. The quantity carried by the animals varies according to the condition of the track and the strength of the animal. Bullocks carry from 4 to 5 bushels, and donkeys and pack ponies from 3 to 4 bushels (96 to 128 lb.) packed in two bags.

(b) *Bullock carts*.—For short distances, bullock carts with wooden wheels and iron tyres or pneumatic tyres on iron wheels still provide an important means of transportation from the godown to the railway station or port office,

[Facing page 208.



ELECTRIC ROASTER.



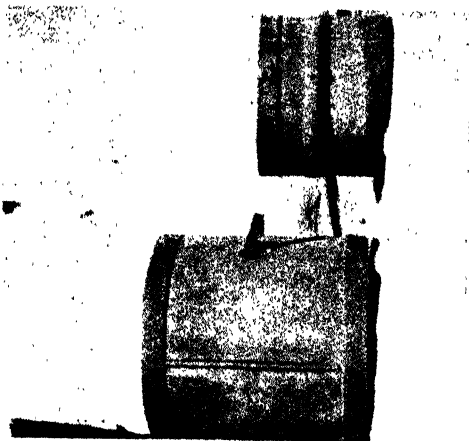
ELECTRIC GRINDER.



COFFEE POT IN A LAHORE
EUROPEAN HOTEL.



PACKING PARCHMENT AT PLANTATION.



BUSHEL AND *marakkal*.

or from ports or railway stations to the buyer's godown, or from one market to another distributing centre. For example, coffee from Nelliampathi and Udumalpet (Kannan Devan crop) to Coimbatore some from Shevaroy to Kannankurchi and Salem, from Nilgiris to Mettupalaiyam and from Virudhunagar to Madura is transported in bullock carts. For long distances, as between most of the plantations and the curing centres, bullock carts take a long time to reach their destination. No doubt this affords an opportunity for the coffee to mature further before reaching the curing yards, but, at the same time, it increases risks of theft as the bullock carts have to halt a number of times on the way. To meet this contingency, the Madras Coffee Stealing Prevention Act was passed in 1878.

(c) *Motor transport*.—Motor lorries being quick and having less chances of theft on the way are fast replacing country carts in the transport of coffee from plantations to curing centres. More than 90 per cent of the crop from Mysore and Coorg is transported by lorries from plantations to the curing yards in Mangalore and Tellicherry. The average carrying capacity of a lorry plying between Mysore and Mangalore was found to be $2\frac{1}{2}$ tons.

(d) *Aerial ropeway*.—The transport of coffee by aerial ropeway is limited to the produce from Anaimalai Hills. The ropeway rises to a height of about 4,000 feet above the sea level and runs for about 30 miles from Anaimalai Hills to the foot of the Ghats. The cost of transportation is Rs. 19 per ton.

(e) *Cost of conveyance*.—The table below shows the comparative cost per ton-mile by the various methods of transportation.

Method of transport.		Approximate cost per ton-mile.		
		Rs.	A.	P.
Headloads		2	9	6
Pack donkey		1	10	9
Pack pony		1	14	0
Pack bullock		1	1	0
Bullock carts		}	0	4 0
			to	
			0	8 0
Motor lorry		}	0	3 6
			to	
			0	5 0

The motor transport and bullock carts are obviously the cheapest methods of road transport, the former being the most economical when the time factor is taken into account.

(2) BY RAIL.

(a) *Extent and direction of movement*.—A small quantity of "Parchment" and "Cherry" coffee and the bulk of "Cured" coffee is transported by rail. 50 per cent of the Nelliampathi crop is transported by rail from Kollengode to Calicut and Shevaroy coffee from Salem to Coimbatore. A portion of Nilgiri crop is booked by rail from Mettupalaiyam to Coimbatore, and 90 per cent of the Kodaikanal produce from Kodaikanal Road to Virudhunagar. The movement of rail traffic within the consuming areas is also comparatively heavy. The estimated average movement of coffee in a season from assembling to distributing centres in the Madras Presidency by rail amounts to about 150,000 maunds. The annual recorded average traffic in coffee by rail (and river) is 177,304 maunds (see Appendix XXXVIII). 94 per cent of the movement was accounted for by Madras and Mysore, the share of Madras being about 82 per cent and that of Mysore about 12 per cent. About three-fifths of the rail

exports from Madras go to Mysore and about one-eighth to the Nizam's Dominions. Bombay comes next followed by the Punjab. More than 90 per cent of the rail imports into Madras come from Mysore. Madras also imports about 1,000 maunds of tinned coffee from Bombay. 70 per cent of the rail exports from Mysore go to Madras, 20 per cent to Bombay and about 4 per cent to Nizam's Dominions. Practically all the rail imports into Mysore come from Madras. Bombay Presidency is the next biggest exporter and importer of coffee by rail. Bombay exports about one-fourth of her coffee to Madras and Punjab each. 90 per cent of imports into Bombay are from Mysore and the balance from Madras. A small quantity of tinned coffee also comes from Sind and Bengal. While Nizam's Dominions import 2,776 maunds of coffee, the exports are negligible being only 18 maunds. About three-fifths of the imports are from Madras and nearly one-third from Mysore. About 450 maunds of ground coffee in tins are imported from Bombay. Nearly three-fifths of the rail imports into Bengal are received from Madras. Only about a tenth comes from Mysore. About three-fifths of the imports into Punjab are from Bombay and Karachi and about 30 per cent from Madras. Only about 144 maunds are exported from the Punjab, nearly four-fifths of which go to the United Provinces. The United Provinces import only about 830 maunds, half of which comes from Bombay and about 17 per cent from Madras. The exports from United Provinces are negligible. About 65 per cent of the imports into Central Provinces are from Bombay and nearly the whole of the balance from Madras. Bihar and Orissa import by rail about 625 maunds a year, more than half of which are from Bengal and about one-third from Madras. Her exports are negligible. The rail imports into other provinces and trade blocks are below 200 maunds and the exports are almost negligible.

(b) *Railway freights*.—Railway rates fall into three divisions, viz., (i) Class rates, (ii) Schedule rates and (iii) Station to station rates.

(i) *Class rates*.—All commodities are grouped into classes for each of which maximum and minimum rates are fixed by the Railway Board as follows :—

Class.	Maximum per maund per mile. (Pies).	Minimum per maund per mile. (Pies).
1	·38	·100
2	·42	
2A	·46	
2B	·50	
2C	·54	
3	·58	·166
4	·62	
4A	·67	
4B	·72	
5	·77	
6	·83	
6A	·89	
7	·96	
8	1·04	
9	1·25	
10	1·87	

The commodities are grouped into the above classes for the purpose of arriving at the rate to be charged when station to station or schedule rates are not applicable and also for fixing the maximum and minimum rate per

maund per mile within the limits of which all rates must be kept subject to exceptions specially authorised by the Railway Board. The class rates quoted exclude the terminal charges, short distance charges and tolls.

It may be observed that coffee, whether raw, roasted or ground, is placed in class 4 and the freight charged is 62 pies per maund per mile at railway risk. These charges have been increased since March, 1940, in common with other commodities by 2 annas per rupee on the total freight. The railway freight does not relate to the value of the coffee. The rates for both raw as well as manufactured coffee are the same at present. It seems a matter for consideration whether a lower rate on raw coffee beans would not bring about an appreciable increase in the present relatively small amount of traffic from the South to Northern India.

(ii) *Schedule rates*.—A schedule rate is a rate quoted on a basis lower than the maximum rate of the class. It may be on a uniform basis, such as, 250 pies per maund per mile or it may vary according to distance or weight on the telescopic (cumulative) principle. It may be quoted per maund per ton or per wagon. The railways do not offer any concession for coffee in wagon loads or for coffee booked subject to any minimum weight per consignment. With an increasing internal demand, the possibility of introducing such concessions might well be explored.

(iii) *Station to station rates*.—These are special rates between two specific points, quoted in cases where the class or schedule rates cannot be applied owing to competition from other transport agencies or where the ordinary rates are too high. Appendix XXXIX gives the station to station rates in force.

There is also a special rate for coffee husk from and to the following stations :—

	Special rate (per maund).	Class rate (per maund).
	Rs. A. P.	Rs. A. P.
Mangalore to Ernakulam	0 3 7	0 14 3
Tellicherry to Ernakulam	0 3 0	0 12 3

It is understood that a good deal of “Blacks and Bits” and inferior coffee were booked by some of the consignors as coffee husk for getting the concession rates. About 3,000 cwt. from Mangalore and 1,000 cwt. from Tellicherry were booked as husk in a season. Observations of a number of consignments seemed to indicate that about 25 per cent of the matter was not real coffee husk. In view of the reported decision of planters and curers to stop the sale of cherry husk, this traffic will now presumably stop.

A short distance charge of 3 pies per maund for traffic booked over distances under 75 miles and a terminal charge of usually 12 pies per maund, are levied in addition, for goods charged at class or schedule rates.

It may be observed that, in 1938, the railways in East Africa allowed a reduction of 50 per cent in freight charges on coffee intended for export. It would be in the interests of the coffee industry as well as the railway

administration to explore the possibilities of applying special rates between the following distributing and consuming centres of coffee :—

From	To	Estimated volume of present traffic (Maunds).
Mangalore	Coimbatore. . . .	15,000
"	Virudhunagar	8,000
"	Madura	5,000
"	Trichinopoly	4,000
Tellicherry	Madras	2,000
"	Coimbatore. . . .	2,500
Calicut	"	3,000
"	Virudhunagar	2,500
Coimbatore	Madras	12,000
"	Calicut	10,000
"	Virudhunagar	2,500
"	Bangalore City	2,300
Mettupalaiyam	Coimbatore. . . .	18,000
Salem	"	12,000
"	Bangalore City	3,000
"	Virudhunagar	2,300
Virudhunagar	Tinnevely	4,000
"	Tuticorin	3,000
Kodaikanal Road	Virudhunagar	3,200

The planters in Nelliampathi have been able to get a special rate from Kollengode to Coimbatore from 1st September 1936. The reduced rate is 3 annas per maund whereas the original rate was 3 annas 10 pies per maund.

(c) *Terms of booking.*—The goods clerk takes charge of the coffee packages at the railway station yard and gets them weighed, labelled and loaded into wagons. Normally, all bags or cases in a small consignment are weighed, but, in cases of wagon load consignments, only about 10 per cent are weighed if the consignor declares that the weight of each package is the same. Coffee is usually kept in covered goods sheds.

Coffee is booked at railway risk where class rates are applicable, but where special rates are charged it is ordinarily booked at owner's risk.

Coffee is transported only in covered wagons. The capacity of metre gauge wagons is from 9 to 11 tons and of the broad gauge wagons from 14 to 24 tons. Reports indicate that insufficiency of wagons is not experienced in any of the distributing areas.

Demurrage is levied on vehicles ordered and waiting to be loaded by consignors or on loaded vehicles waiting to be unloaded by consignees, when the time allowed free by railways for loading or unloading the consignments is exceeded. Wharfage, on the other hand, is levied on goods waiting at a station to be consigned *i.e.*, brought to the station but for which a consignment note has not been received or on goods waiting to be delivered after they have been made available for delivery, when the time allowed free by railways is exceeded. The free time allowed before demurrage accrues is 9 hours of day-light after which demurrage is charged usually at the rate of one anna per ton per hour on the capacity of the wagon. The free time allowed

before wharfage accrues in respect of consignments waiting to be consigned is generally up to mid-night of the day next following that on which goods are brought to the station, and for consignments waiting to be delivered, ranges from 24 to 72 hours according to the nature and importance of the station and the facilities for storage available in the goods shed. The wharfage charges are usually recovered at the rate of 3 pies a maund or a part of a maund per day or a part of a day in excess of the free time.

Instead of assisting the Railway Administrations towards stoppage of bribery and corruption by reporting and proving such cases, the consignors and consignees apparently prefer to spend a small extra amount for facilitating booking, proper handling and delivery of the goods. This differs at different stations and depends on the quantity of the goods consigned. Usually, the charges range from 8 annas to Re. 1 per consignment.

(3) BY INLAND WATERWAYS.

The transport of coffee by inland waterways is confined to Travancore and Cochin States. The extreme cheapness of this form of transport has been its main attraction. Travancore has over 200 miles of canals and backwaters and for centuries these have been the highways of trade in the State. Canoes or *vallams* are the chief means of transport. The bulk of the coffee produced in Central Travancore is transported through the backwaters for distribution in the internal markets. Coffee from Palai, an assembling centre in Central Travancore, is transported in canoes to Alleppey, Quilon and Trivandrum, and coffee and coffee husk imported from Mangalore, Tellicherry, Coimbatore and Mettupalaiyam is taken by canoes from Ernakulam to Changanacherry and Alleppey and other backwater points. The cost of transport by canoe or *vallam* works out at about .2 pies per maund per mile. The boats carry from 100 to 200 bags of coffee. The small quantity of coffee passing between Cochin and Travancore is also carried in country boats for the rates quoted above.

The South Indian Railway has also provided for transporting, by boats, coffee and coffee husk from Ernakulam to Changanacherry, a distance of about 68 miles. The following are the rates in force :—

	Freight per maund for coffee and coffee husk.					
	Owner's risk.			Railway risk.		
	Rs.	A.	P.	Rs.	A.	P.
(1) Below 25 maunds	0	2	8	0	3	2
(2) Over 25 but below 50	0	2	2	0	2	8
(3) Over 50 but below 100	0	1	9	0	2	2
(4) Over 100 maunds	0	1	8	0	2	0

The charges levied by the Railway are comparatively high, and therefore most of the traffic from Ernakulam to Changanacherry is handled by private agencies.

(4) BY SEA.

(a) *Coastal trade.*—The volume of coastal trade in coffee is comparatively small. The total trade amounts to about 22,000 cwt. Appendix XL gives figures of monthly average coastal exports and imports of coffee from and into the different maritime provinces in India. The total quantity of the coastal exports and imports amounts to about 12,000 cwt. each. There is

an appreciable decline in the coastal trade from June to October. The West Coast ports close towards the 3rd week of May and open in September. This synchronises with the off-season months of coffee.

The coastal imports and exports into and from Bengal are gradually going down. In 1933-34, Bengal imported 938 cwt. and exported 449 cwt. In 1937-38, no coffee was imported into Bengal coastwise and only 36 cwt. were exported. Taking the quinquennium ending 1937-38, the average annual import into Bengal was about 500 cwt. About 75 per cent of this came from Madras, 90 per cent of which was raw beans. The imports from Bombay consisted mostly of ground coffee. Burma and Madras took in most of the exports from Bengal, 95 per cent of which was ground coffee in packages. A small quantity (about 20 cwt.) of tinned coffee found its way into Bhavnagar as well.

Bombay is the largest coastwise importer of coffee. The average annual imports amount to about 7,600 cwt. More than 75 per cent come from Madras and about the whole of it consists of raw beans. The coastal exports from Bombay are only about 235 cwt. a year. Sind and Bengal take manufactured coffee from Bombay.

Excluding the imports from Burma, Madras imports coastwise only about 250 cwt. a year. Most of it is manufactured coffee from Bombay and Bengal. She exports about 12,000 cwt., 90 per cent of which is raw beans. Sind imports about 200 cwt. of coffee. Besides this, about 200 cwt. of manufactured coffee are imported under the head of provisions, which are not recorded as coffee in the Customs records. About 60 per cent of the raw beans are taken from Madras, about 30 per cent from Bombay and 10 per cent from Burma. More than 50 per cent of the imports of manufactured coffee come from Bombay, about 30 per cent from Madras and the remainder from Bengal.

The steamer freight charges from and to the various coastal ports are given in Appendix XLI. For eliminating rate cutting and excessive competition the steamship companies operating on the Indian coasts are under agreement to charge certain fixed rates. The rate from Mangalore to Bombay is 10 annas per maund of 82 $\frac{2}{7}$ lb. and from Mangalore to Karachi 15 annas per maund. From Mangalore to Calcutta it is Rs. 18 per ton of 20 cwt. net, and from Madras to Calcutta Rs. 11 per ton of 18 cwt. net. The steamer freight from Bombay to Karachi is Rs. 20 per ton of 20 cwt. From Bombay to Calcutta it is Rs. 9-8-0 per ton of 14 cwt., less 10 per cent rebate. It is notable that the charge for tinned coffee is less than for raw beans. From Madras to Calcutta it is Rs. 10 per ton or 50 cubic feet, and from Malabar ports to Calcutta Rs. 15 per ton or 40 cubic feet.

In Calcutta, if the goods are loaded overside no landing charges are paid but river dues are charged at Rs. 1-4-0 per ton, and when goods are removed by lorries or carts an extra amount of Re. 0-1-3 has to be paid as landing charge. Counting from the time of actual landing, four days' free time is allowed. If the clearing documents are made over to the shed foreman within the free days, the responsibility of the consignee for loading in wagon ceases and he does not have to pay any wharf rent. On the expiry of the free time allowed, a wharfage of Re. 0-2-0 per ton for the first four weeks, Re. 0-4-0 per ton from 5th to 8th week, and Re. 0-8-0 per ton per week from

9th week is charged. Besides the above, the following charges have to be paid at the time of taking delivery :—

	Per consignment.		
	Rs.	A.	P.
Landing	0	0	9
Chalan filling	0	1	0
At gate	0	1	6
Delivery clerk and agent's men	0	1	0
Purchasing clearing <i>chalan</i>	0	1	3
At the time of paying the rent, if due	0	0	6
Total	0	6	0

The above are the unofficial charges incurred at the time of loading in Calcutta.

In Cochin, for writing bill of landing and passing it at Customs house about 6 annas are paid by the consignee per consignment. In Karachi the clearance charges per invoice amount to about Re. 1.

(b) *Foreign trade*.—This has been discussed in Chapter I. The exports from India are practically confined to raw beans. Only about 80 cwt. of tinned coffee is exported. About 99 per cent of the exports are from ports in the Madras Presidency, Mangalore accounting for about 79 per cent, Calicut 12 per cent, Tellicherry 6 per cent and Cochin about 2 per cent.

The freight charges differ with the length of the voyage. Generally, the freight rates for coffee are quoted on per ton of 18 cwt. Since the War in 1939, the freight rates to the main receiving ports have undergone changes. The prices to foreign countries are quoted on c. i. f. basis except to Norway where they are usually quoted on c. & f. basis. In March 1938, two steamship companies gave a temporary reduction of 5 *sh.* per ton in the freight rates on coffee shipped from West Coast ports to the French ports. It may be observed that in the beginning of 1938 the Shipping Companies engaged in transporting goods from East Africa to foreign countries reduced the freight rate on coffee to the extent of 7*s.* 6*d.* per ton. The harbour dues were also reduced by 50 per cent at the same time.

The Shipping freights from Mangalore to the main receiving ports in Europe were as follows before the War :—

From Mangalore to	*Freight per ton of 18 cwt. s. d.	
London	57	6
Marseilles	57	6
Amsterdam	57	6
Oslo	87	6
Antwerp	57	6
Rotterdam	57	6
Bremen	57	6
Halsenburg	81	6
Stockholm	81	6
Havre	62	6
Dunkirk	62	6
Bordeaux via Havre or Dunkirk	104	6
Nantes	98	6
Rouen	92	6
Copenhagen via Hamburg	81	6

*In March 1938, a temporary reduction of 5 *sh.* per ton on the above freight rates on coffee shipped from West Coast Ports to the French Ports was allowed.

C.—Burma.

(1) HANDLING.

Coffee is handled in baskets by the small growers and village traders. The cost of a basket is about 3 pies. The commission agents put the coffee in gunny bags at the assembling centres. The bags cost about Re. 0-2-6 each. The weighing, bagging, and sewing cost about Re. 0-1-3 a bag containing about 150 lb. Coffee is usually packed in single bags. Only a small quantity of coffee is exported. Coffee exported to the United Kingdom is packed in double bags while coffee exported to India is usually packed in single gunny bags.

(2) TRANSPORTATION.

The planters in Shan States usually take their coffee by headloads to village markets. The village traders from Karen Hills mostly take their coffee themselves to Toungoo. In some cases, coolies are hired and the rate paid is Rs. 1-8-0 per cooly carrying about 90 lb. for a distance of 30 to 40 miles from the assembling centres like Myaing, Pinlaug, Pindaya and Pwela. Coffee is usually transported in lorry to Aungban. The charges paid by the wholesaler's buying agents are as under :—

	Rs.	A.	P.	
From Myaing—28 miles	1	8	0	Per 100 viss or 360 lb.
From Pinlaug—46 miles	2	4	0	Do.
From Pindaya—24 miles	1	0	0	Do.
From Pwela—18 miles	0	12	0	Do.

The bulk of the crop assembled in Aungban is now carried by lorry to Rangoon. The lorry charge from Aungban to Rangoon is only Rs. 3-8-0 per 100 viss or 360 lb., while the railway freight is Rs. 5 for the same quantity. The lorry takes the coffee from the godown of the wholesaler to the godown of the Rangoon merchant. The incidental handling charges are also eliminated in the case of lorry traffic.

For these reasons, the railway is being fast replaced by lorry as the following figures of coffee transported by rail from Aungban to Rangoon show :—

Year.	Cwts.
1932-33	3,000
1933-34	2,920
1934-35	3,600
1935-36	1,560
1936-37	80

It may be noted that the competition with lorry started towards the end of 1935-36 and by 1936-37 the railways were practically out of the picture.

Coffee from Karen Hills is mostly collected in Toungoo by the manufacturers.

INTER-CHAPTER EIGHT.

Charges incurred in the course of curing, grading and transporting coffee to auction rooms are included in the curing charges, but the cost of handling and packing (including stencilling on bags intended for export) which amounts to 6 to 8 annas per cwt. has to be met by the planter in addition to the curing charges.

When the Tellicherry curers send the coffee to their branches in Mangalore for sale, the planters have to pay an extra charge of 6 annas per cwt. for packing, weighing and transport to railway station. Similarly, coffee lying unsold with the curers on the planters' account in Calicut is either sent to Mangalore or Coimbatore, the handling charges being borne by the planters.

Some distributors pack coffee for the retail trade in twill bags having a capacity of 7 lb. and 10 lb. net. The cloth bags are sealed and often packed in an outer bag. The cost of these bags including sealing, etc., is included in the rates quoted to the trade.

The motor transport and bullock carts are obviously the cheapest methods of road transport, the former being the most economical when the time factor is taken into account. The movement of rail traffic within the consuming areas is also comparatively heavy. The estimated average movement of coffee in a season from assembling to distributing centres in the Madras Presidency by rail amounts to about 150,000 maunds.

The railway freight on coffee which is .62 pies per maund per mile at railway risk has been increased since March, 1940, by 2 annas per rupee on the total freight. At present the rates for both raw as well as manufactured coffee are the same. It seems a matter for consideration whether a lower rate on raw coffee beans would not appreciably increase the present relatively small amount of traffic from the South to Northern India.

The railways do not offer any concession for coffee in wagon loads booked subject to any minimum weight per consignment. In 1938, the railways in East Africa allowed a reduction of 50 per cent in freight charges on coffee intended for export. It would be in the interests of the coffee industry as well as the railway administration to explore the possibilities of applying special rates.

There is a special concession rate for coffee husk. Observations of a number of consignments in a season, however, indicated that about 25 per cent of the matter booked as husk was not real coffee husk. In view of the reported decision of planters and curers to stop the sale of cherry husk, this traffic will now presumably stop. The railways could assist by withdrawing the special concession rate on husk.

The transport of coffee by inland waterways is confined to Travancore and Cochin States. Due to high railway freight and out-agency charges, most of the traffic from Ernakulam to Changanacherry is handled by private agencies. The volume of coastal trade in coffee is comparatively small. The West Coast ports close towards the 3rd week of May and open in September. This synchronises with the off-season months of coffee.

For eliminating rate cutting and excessive competition, the steamship companies operating on the Indian coasts are under agreement to charge certain fixed rates. It is notable that the charge for tinned coffee is less than for raw beans.

The bulk of the crop assembled in Aungban is carried by lorry to Rangoon. The competition from lorry started towards the end of 1935-36 and by 1936-37 the railways were practically out of the picture.

CHAPTER IX.—WHOLESALE DISTRIBUTION OF RAW COFFEE.

A.—India.

The movement of coffee from the planter to the curer, commission agent or first buyer has already been described in chapter V on Assembling. The next stage in the process of passing raw coffee from planter to the consumer is distribution. Coffee is distributed by the following agencies :—(1) Planters, (2) Itinerant vendors, (3) Curers and commission agents, (4) Co-operative organisations and (5) Wholesale distributors.

(1) PLANTERS.

Planters as a rule take little part in the distribution of coffee. Some of them sell their crop directly to manufacturers. On account of the depression in prices some planters have been of late trying to deal with retailers direct in the hope of getting better prices. It appears that some of them have obtained better prices in this way. Some of the wholesale distributors and exporters are also planters and they distribute or export coffee of their own plantations. A few of these have taken to manufacturing as well. But instances of planter *cum* wholesale distributor *cum* manufacturer are few. The coffee distributed directly by planters would not exceed 3,000 cwt. a season.

(2) ITINERANT VENDORS.

Only a very small portion of the crop is distributed by itinerant vendors. They purchase from planters and sell to retailers and in some cases to consumers. The Moplahs go round the small plantations in Wynaad and Coorg to collect the crop and sell it to retailers in Calicut and Tellicherry. Chettiers collect a portion of the crop from Shevaroy's, Nilgiris and Palni Hills and sell it either to wholesale distributors or to retail merchants in Salem, Mettupalaiyam, Virudhunagar, Dindigul and Madura. A small portion of the Mysore crop is also distributed in this way by itinerant vendors in Chikmagalur and Mangalore.

Most of the *robusta* crop in Travancore is collected by the village traders and distributed to buyers in Virudhunagar and Coimbatore and in the internal markets *e.g.*, Alleppey, Quilon, Trivandrum and Nagercoil. In most of the markets in Cochin, coffee is distributed to consumers by hawkers. The total estimated quantity distributed by itinerant vendors would be about 15,000 cwt. a season.

(3) CURERS AND COMMISSION AGENTS.

The curers and commission agents form an important link in the chain of distribution. These agencies assemble and distribute about three-fourths of the total crop. As mentioned in the chapter on Assembling, the curers and commission agents sell on behalf of planters and also buy and sell on their own account. The curers in several cases buy from 30 to 40 per cent of the crop cured by them. They buy from planters both forward and spot. When price fluctuations are favourable they sometimes purchase forward as much as three-fourths of their requirements. They either export the crop or sell it to wholesale distributors in India. The method of sale has already been described in

the chapter on Assembling. The curers effect sales through brokers or direct to manufacturers.

The curers in Coimbatore retail a considerable quantity of coffee through agents appointed by them in the chief consuming centres in the South. Some of them keep salesmen also who are given a small discount on sales over and above the pay.

The commission agents in Virudhunagar, Mettupalaiyam, Dindigul, Salem, Chikmagalur and other smaller centres are generally engaged in the distribution of coffee in the internal markets. They sell usually through brokers but sometimes directly to wholesale distributors and manufacturers.

(4) CO-OPERATIVE ORGANISATIONS.

The Coffee Growers' Association of India.—This Association, started in 1931, was inaugurated mainly to work for better prices of coffee, to establish a central agency for the sale of coffee, and to combine all coffee growers into one association. About 33,000 acres were represented. In actual practice the work of the association was mostly confined to advertising and propaganda. They participated in exhibitions and tried to put individual planters in direct contact with retailers. In 1937, they amalgamated with the United Planters' Association.

Shevaroy Coffee Growers' Co.—This was another attempt by the planters to market their coffee. The Shevaroy Coffee Growers' Co. undertook curing, selling and also manufacturing of coffee. They put on the market coffee powder in tins and paper packets under the caption Summit Coffee Works. They bought coffee from the planters at the market rates and either sold it in the form of raw beans or converted it into coffee powder. Their sales have gradually gone down and they have not made any impression on the market.

Consumers' Co-operative Societies.—Many consumers' co-operative stores in the South and the co-operative stores organised by the South Indian community in Bombay, Poona, Delhi and Simla sell coffee in retail along with other provisions. They get their requirements from the curers or wholesale distributors and make no attempt to buy from planters or growers co-operative societies direct.

(5) WHOLESALE DISTRIBUTORS.

The wholesale distributors purchase coffee from planters, curers or commission agents and sell it to retailers or wholesalers in other distributing centres. For example, the wholesale distributors in Mangalore purchase coffee from the curers and sell it to wholesalers in Virudhunagar, Coimbatore, Trichinopoly and to the towns in Northern India.

The wholesale distributors in Cochin and Trichur get their supplies from wholesale merchants in places like Coimbatore, Mangalore, Mettupalaiyam, Tellicherry and Salem and in turn distribute it to retail dealers. The wholesale dealers also sell to hawkers who go about with small bags, tins or chests of coffee from house to house. The hawkers carry a set of weights and scales for weighing coffee. The wholesale merchants in Travancore get coffee from Virudhunagar, Tuticorin, Mangalore and Tellicherry and also from assembling centres like Palai and Ponkunam.

The wholesale distributors in Mettupalaiyam, Coimbatore, Virudhunagar and other centres have travelling salesmen who visit consuming centres and book orders from the wholesalers, coffee clubs and retailers. They are paid a commission of 1 to 2½ per cent on sales.

B.—Abroad.

(1) UNITED KINGDOM.

The London market is an important distributing centre especially for high quality Indian coffees. It also used to be an important re-export market, but of late it appears to be gradually losing its importance in this respect.

The London trade is largely done in coffee known in the trade as "Home Trade" quality *i.e.*, coffee from particular plantations having special "Estate marks." When the "Home Trade" coffee is bought by exporters other than curers for the purpose of shipping to London, a curer's certificate is required by the Inland Revenue Authorities to enable "Colonial Preference" to be claimed. To ensure that the coffee is not tampered with, the consignment, is weighed, packed and sealed in the godown of the curer concerned and transported directly to the port office. Most of the shipments are made on a consignment basis. Sales of high quality coffee are also made on samples or actual description mentioning the name of the estate and the "Estate mark."

(a) *Auctions*.—Coffee sent to London on consignment basis is usually sold by public auction through agents in Mincing Lane. Auctions are held about four times a week, generally on Tuesday, Wednesday, Thursday and Friday. The "Public Ledger" and the catalogue of offerings issued by the auctioneers advertise the sales. On arrival, coffee is kept in bonded warehouses until required for sale. Each consignment is bulked, and samples are drawn according to the size of the consignment. The quantity of sample allowed is as under :—

150 bags	8 oz. per bag.
151 to 300 bags	6 oz. per bag.
Exceeding 300 bags	4 oz. per bag.

Sometime before the auction, samples are exhibited for inspection in trays. A small standard quantity from each sample is roasted, ground and prepared for drinking and the expert tasters taste each of a large number of samples in turn and make notes for valuation. Before 1-30 P.M. the time when the auction starts, the connoisseurs give their opinion. For quality coffee the acid test is the liquoring test and experts lay stress on factors such as "bite" or "acidity" (not in the chemical sense). The flavour should be "sharp", but not "bitter", or "rough" or "hard". As with all commodities, good appearance tells, both in the wholesale market and the retail shop. The more a particular coffee comes under the category of "bulk grades" (as distinct from quality grades) the more important the appearance of the bean.

The actual selling is done by competitive bidding. When the highest bid is accepted, the selling broker sends a Sale Note to the selling agent and a Bought Note to the buying broker. The planters in India sometimes stipulate to their agents the minimum price at which their produce might be sold. In other cases the agents are authorised to sell for the highest bid. In either case if the selling broker finds that the highest bid falls short of the minimum value authorised by the planter or estimated by the agent, the coffee is withdrawn. Such consignments are put up in auction at a more convenient opportunity or sold later by private negotiation.

The planters and exporters are charged a selling commission of $1\frac{1}{2}$ per cent and a brokerage of 1 per cent. The buyer receives a discount of 1 per cent.

besides draftage, the seller having to reckon on loss in weight of about $\frac{1}{2}$ per cent. Draftage allowed depends on the size of the package and is as follows :—

	lb.
Bags from 28 lb. to 112 lb.	1
Bags from 113 lb. to 186 lb.	2
Wooden packages not exceeding 3 cwt.	2
Packages from 4 to 5 cwt.	4
Over 5 cwt.	5

The buyer has to pay $\frac{1}{2}$ per cent brokerage. The remittance of the proceeds to India is usually done at the London Bank's selling demand rate. The Bank's profit on the exchange is normally 1/16 *d.* per rupee, *i.e.*, the difference between the Bank's buying and selling rates.

Transactions in London market are generally subject to the rules of the London Coffee Trade Association. (See Appendix XLII).

(b) *Sale on sample.*—In the case of quality coffees, open sale in public auctions is perhaps the best method of ensuring the maximum return to the planter. But in the case of lower grades and of coffee that has no special reputation on the London market, sale by auction involves a certain amount of risk. Such coffee is, therefore, often sold on sample and "description to arrive". This is perhaps the most successful method of marketing bulk coffee. This method, however, presupposes systematic grading accepted by the exporters and buyers and also a regular supply on large scale.

The despatch of samples to London by air mail is getting increasingly popular. Samples are sent in small cloth lined paper envelopes and the quantity available is cabled. Offers are made by buyers and on acceptance by the seller, consignments are shipped subject to the condition that any disputes arising out of such shipments are referred to arbitration. For claiming arbitration a time limit after the arrival of the coffee is usually fixed. If the buyer, on examining the coffee, feels that it is not up to the standard of the sample, he nominates an arbitrator who is usually a broker and the seller's representative also nominates one. Samples are drawn by an independent party from the bulk and forwarded to the arbitrators. They compare the original sample with the sample from the bulk. The award made by the arbitrators is final. If they are unable to agree, they nominate an umpire whose decision is final. If an arbitration is called by the buyer and the seller fails to appoint an arbitrator, the buyer can appeal to the Coffee Trade Association of London to nominate an arbitrator. The acceptance and enforcement of arbitration is actionable in a court of law. Fees for arbitration are as a rule paid by the losing party but in some contracts a clause is inserted that the fees shall be divided between the parties.

(c) *Forward delivery.*—London also buys forward from planters and exporters in India. When the total estimated quantity of the crop is sold forward by the planters, the seller is permitted to ship any quantity in excess up to a maximum of 10 per cent but the buyer gets no protection if the crop falls short of the estimate within the 10 per cent limit. Appendix XLIII gives a specimen contract form. The sales for forward delivery are made on c. i. f. basis. Disputes arising out of the contract are settled by arbitration in the usual manner.

(d) *Methods*.—Secondary wholesalers buy from the big wholesale buyers and pass on the coffee to retailers. Most of the wholesale merchants do not confine themselves to coffee but deal in tea as well as other produce.

The planters in India and the exporters are kept informed by their agents about the trend of the London market, price fluctuations, etc. Besides this, there is no official bulletin published by the coffee trade in London, as is done by the London Tea Brokers' Association. The periodical circulars issued by the agents deal mainly with coffees from India and do not contain information about competitive coffees *e.g.*, from East Africa and Costa Rica. The need for fuller information is being felt on account of the increasing competition from other countries. "A general service of market intelligence on a standard and uniform basis", as suggested in the 19th report of the Imperial Economic Committee, seems to be an urgent necessity.

About 40 per cent of the exports in 1937 were taken by France. Havre and Marseilles are the chief importing centres. Shipments are diverted from these two ports to Bordeaux, Nantes and Strassburg.

Havre is one of the important coffee markets in Europe. Before the 1914-18 War, Havre held in bonded warehouses the largest stocks of coffee in the world. She is still at the top of coffee importers in Europe.

Coffee from India, as from other places, is generally sold on "description to arrive" basis. Fair average quality of the season at the time of shipment is the usual basis on which transactions are made. Standards vary from shipper to shipper but buyers, it is said, know the standards of individual shippers and this is why samples are not usually sent. The necessity for standardising grades is, it would appear, greater in the case of Native "Cherry" coffee than for plantation. However, some exporters transact business after sending samples in the beginning of February, so that the fair average quality of the season may be made known to the French importers. There are no auctions except for damaged coffee. Futures are dealt on the Havre Bourse. The price is quoted on a quantity of 50 kilogrammes (110 lb.). Most of the shipments are made *c. i. f.* or *c. f.* Exporters usually transact business through agents, who go round to buyers particularly wholesale roasters and canvas orders for their principals in India. The agents also circularise the offers by phone and communicate counter offers or fresh offers. Appendix XLIV shows a typical contract form used for buying and selling "Cherry" coffee in Havre. All *c. i. f.* sales of coffee to the Continent carry a quantity latitude of 5 per cent at the option of the seller. The sellers reserve to themselves the right of shipping from any port on the Malabar Coast from Mangalore to Alleppey or Madras. Sales are usually made on delivered weight terms. Weighing and other charges at the port of destination are met by the buyers. Agents send official weight notes to sellers. The weight is determined by taking the gross weight to the fraction of a lb. or kilo, and deducting the actual tare as shown in the invoice. Sworn official weighers employed by the Customs Department take the weight and the customs weight is the final record which is referred to in the case of differences between seller and buyer. The buyer's representative is usually present at landing and samples drawn from about 5 per cent of the shipment are sealed in case the buyer or the agent of the seller finds that they are below the description given. Any claim on quality etc. has to be preferred within the stipulated time of the landing of the goods. In the case of sales to Havre there is a quality franchise of 6 d. per cwt; in the case

of sales to Rouen, Nantes and Bordeaux the charge is 1 *sh.* per cwt. which means that there can be no claim for inferiority of quality as long as the value of coffee is within 6 *d.* per cwt. or 1 *sh.* per cwt. of the accepted standard. Sealed samples are sent for arbitration. The agents sometimes make private settlement with the buyer when the amount involved is small. Arbitration in Havre is considered fair and satisfactory. While some exporters stipulate Havre arbitration, others mention London arbitration. The claims usually involved are from six pence to 1 *sh.* per cwt.

The agents get a commission of 2 per cent from the seller. The cable and postal charges are usually borne by the agent but when agents work on $1\frac{1}{2}$ per cent commission, these charges are defrayed by the exporters in India. The seller sometimes makes a condition that the agent should indemnify him in the case of non-fulfilment of contract by the buyer.

(3) GERMANY.

From September 1939, the War upset all existing arrangements. The conditions before the War are explained below :

The distribution of coffee was done by agents. There were no coffee auctions in Germany except in the case of damaged product. The Exchange Control Board attached to the Reichs Bank stipulated the amount available in German currency for payment of the imports and issued the necessary licence. The quantity thus allowed was apportioned to importers month by month after they furnished necessary particulars. The buyer or the agent who applied had to satisfy the Government that arrangements for exporting German goods against the quota had been made.

Germany had clearing arrangements with Brazil, Colombia, Costa Rica, Guatemala and other coffee producing countries. Forward transactions were only carried out in the case of Brazilian coffee.

Market reports are obtained by the importers from their agents. The association of coffee dealers in Hamburg furnishes members daily with a financial market report containing all important information on the coffee market.

(4) NORWAY.

Business is transacted through agents whose number has considerably increased of late. There are no coffee auctions or coffee exchanges. About 50 per cent of the sales are forward. Sales are mostly made on c.f. basis and on delivered weight. Transactions on shipped weight are also not uncommon. The Norwegian importers prefer to have their shipments in Norwegian steamers as they get some discount on insurance.

Shipments are made on the basis of fair average quality of the season as represented by total exports at the place of exportation at the time of shipment. Instances of claims for arbitration are rare. The arbitration is usually referred to Havre though some shippers stipulate London arbitration.

There appears to be a keen competition in Norway for securing agencies for import business. It also appears that due to this competition some undesirable tendencies are creeping in. Instances of agents backing out of transactions in cases of increase of price are becoming more common. Such agents drop their old trade names and re-appear under new ones. Combined action by shippers in India would, to a certain extent, help in eliminating such undesirables from the trade. An association of shippers would go some way to achieving this object and to safeguard the interests of Indian exporters.

As in France, the agents are given a commission of 2 per cent but they have to bear the cable and postal charges.

(5) UNITED STATES OF AMERICA.

Though the exports to the United States of America are negligible, it is one of the biggest potential markets for Indian coffee and, therefore, a description of the methods of trading in U. S. A. should be useful to the Indian trade.

The "spot" market in New York deals with actual coffee in the warehouses. Business is transacted through brokers who very often represent country buyers. The seller pays a commission of about twenty cents a bag when sold in small lots and half per cent in large lots. Besides "spot" transactions, large business is done in Brazilian coffee on c. & f. basis. But the freight is actually paid by the importer on the arrival of coffee and the amount deducted from the final payment. Some business is also done on c. i. f. or f. o. b. basis. Payment is done by a letter of credit drawn on a New York or London Bank approved by the exporter which gives him the right to draw at ninety days sight against the shipping documents. But the exporter usually discounts the bill before the expiry of the term. In order to prevent the shipment of low grade coffee the seller has to forward a certificate stating that the consignment has not been adulterated and is prepared in accordance with the provision of the Food and Drugs Act of the United States. In the case of "bulk" coffees, shippers' declared weights are accepted and the buyer bears the loss in weight in transit. If any bags are torn on the way, the buyer has to accept ships fillings. The bags are usually 132 lb. net, the gross weight being 133·125 lb. "Mild" coffees are not usually bought on a cost and freight basis. They are purchased on type or sample on the basis of landed weight.

In New York there are 75 firms doing wholesale business in coffee, 30 in San Francisco and 25 in New Orleans. In all there are about, 6,000 firms doing wholesale business.

(6) OTHER FOREIGN COUNTRIES.

(a) *Belgium*.—Antwerp is the chief market. The terms and conditions of sale are the same as in Havre. The exporters stipulate London or Havre for arbitration.

(b) *Holland*.—Amsterdam is one of the biggest coffee markets in Europe. Business is done through brokers or agents. Large speculative trade for supplying coffee to Germany and Central Europe and also to Norwegian markets is carried on. It is reported that Indian shippers have often not been fairly treated by agents or importers in Amsterdam *e.g.*, it is claimed that there are instances where agents act in collusion with buyers to the detriment of the sellers. Shippers usually stipulate London or Havre arbitration as they have little faith in Amsterdam arbitration. Most of the business is done forward on c. i. f. and shipped weight basis. A discriminate selection of brokers or agents appears to be necessary for tackling this market.

(c) *Persian Gulf*.—Coffee exported to Persian Gulf goes to Baghdad, Egypt and Palestine. Shippers usually deal straight with buyers. There are no agents or brokers. Samples are not sent and sales are made on f. a. q. basis.

(d) *Union of South Africa*.—It is noteworthy that there is a fair element of South Indians populated in South Africa. There is, therefore, a very good chance for the Indian coffee shippers to come in contact with the Indian merchants in South Africa and to explore the possibilities of the market in that country.

(e) *Canada*.—The requirements of the coffee market in Canada are well known to the London wholesale coffee merchants. But the tendency during the past few years has been to import requirements of coffee from the country of origin direct. The Indian planters and shippers should explore the possibility of tackling the Canadian market through their London agents and also by establishing direct contact with the trade in Canada. About 20 million lb. of coffee is roasted in Canada, the imports of raw beans averaging about 31 million lb. annually.

C.—Methods of distribution in the non-producing areas in India and Burma.

Bombay.—The wholesale distributors of provisions in Bombay get coffee from Mangalore and other distributing centres in the South through brokers who charge a brokerage of about 8 annas per cwt. Commission agents purchase coffee from these wholesale stockists for their *mofussil* clients, who again sell it to retailers. The commission agents in Bombay generally know the requirements of their clients, but occasionally samples are also sent for approval. The *mofussil* purchasers usually buy on credit and they have to pay interest at the rate of 6 to 9 per cent on outstandings. They have also to meet a commission of Re. 1 per cwt. and Re. 0-2-0 per bag for carting besides a deduction of about 4 lb. per bag.

In the South Maratha country, in places like Dharwar, Belgaum and Hubli, the retailers place orders with coffee merchants in Mettupalaiyam, Coimbatore, Madras, Kadur or Chikmagalur. They generally get samples and quotations from the coffee merchants of the above places. The rates are usually quoted f. o. r. despatching station. They have to meet the freight charges, pay for carting from station to the shop, octroi duty and also bank charges for remitting the amount.

Bengal.—In Bengal, some of the *byaparies* take advance from the local *arotdars*, visit the distributing centres in the South and purchase coffee on their own responsibility. The stock is kept in the godown of the *arotdars* who charge a godown rent of 2 annas per bag of 2 maunds, 4 annas per cent per month for insurance, and 8 annas per cent *arotdari*, besides interest of 12 annas per cent per month for the capital advanced. Brokers negotiate sales between *byaparies* and merchants on a commission of 4 annas per maund. The brokers are generally responsible for payment, as it is usually due one month after delivery. The merchants sometimes purchase direct from *byaparies* but even then a brokerage of 4 annas per maund is charged. If the price is paid in cash a deduction of 1 per cent is allowed. Some of the manufacturers who prepare freshly ground coffee get the raw beans directly from the producing centres. Samples are asked for and orders are booked after seeing the samples.

There are no terminal or octroi charges for coffee in Bengal.

Punjab.—A good number of the dealers in the Punjab buy their raw beans from the travelling agents of the larger manufacturing firms after seeing samples. Raw beans are usually sent f. o. r. sender's station. The railway receipt is sent to a bank along with a sight or demand draft (*hundi*).

The method of distribution in the United Provinces is the same as in the Punjab.

Sind.—General merchants who deal in spices, pulses, copra, etc., order for coffee from Mangalore and other centres of distribution through brokers after getting the samples and quotations. The general merchants are members of the *Kariana* (Provision) Merchants' Association which has fixed the amount

of discount, brokerage and interest. A *sayak* fund of 3 pies and charity of 1 pie per bag are to be given to the Association. Usually 15 days' time is given for payment. Those who pay cash get a remission of 6 annas per cent interest.

One of the big distributors of coffee having branches in Mangalore and Virudhunagar sells coffee on consignment basis through the general merchants in Karachi. A sales commission of Re. 1 per cent is given to the Karachi merchant.

Nizam's Dominions.—Coffee is imported by merchants on the basis of samples through brokers in Salem, Coimbatore or Mysore. The wholesalers sell to retailers in quantities of not less than 12 lb. at a time.

Burma.—Some of the planters on Karen Hills take their crop directly to manufacturers in Toungoo. Most of the distribution is done by wholesale distributors. The wholesale distributors in Aungban purchase coffee from village traders and sell it to wholesalers in Rangoon, who in their turn sell to manufacturers and retailers through brokers. Some of the manufacturers also import coffee directly from India while others, as mentioned above, buy from small planters and wholesale distributors.

D.—Finance of wholesale distribution.

The itinerant vendors engaged in distribution have a small working capital which is usually sufficient for making their purchases from planters. Those who sell to commission agents on consignment basis are financed by them as mentioned in the chapter on Assembling. The sales made by curers to wholesale distributors and exporters are usually on cash basis. The wholesale distributors in the different distributing centres in the South get loans from local joint stock banks. These advances are usually against stock which is kept under the control of the bank as security for the loan. About 65 to 70 per cent of the market value of the coffee is advanced at rates of interest ranging from 9 to 12 per cent. The godowns are kept under seal by the bank and the merchant is permitted to sell from the stock on payment of the value of the crop to the bank for the quantity sold. If coffee has to be garbled or prepared for shipment, the bank permits this operation under the supervision of an employee of the bank, who is paid about Rs. 15 per month by the shipper. Financial arrangements between wholesale merchants and buyers depend on the personal knowledge and standing of the party concerned. In some cases the buyers remit the money within a week by *hundi* or cheque. The distributing merchants also send round their agents and collect money periodically. In Cochin 35 days credit is given to the purchasers. If cash payment is made a deduction called *takka* which is equal to 12 per cent interest per annum for the period of credit is made from the bill. In Trichur market, 8 days time is allowed for payment in cases of transaction between dealers. After 8 days, interest is charged at 12 per cent. For transactions with markets outside Cochin and Trichur but within the State, 15 days time is allowed for payment after which interest at 12 per cent is charged. But in most cases the railway receipt is sent to a bank along with a sight or demand draft. The bank gets the draft accepted by the importers on which the receipt is handed over to the consignee. In the case of sight draft the money has to be paid immediately. Demand drafts for 30 or 60 days are also in use. In the case of sales to North Indian markets the railway receipt is usually sent by value payable post (V. P. P.).

Regarding exports to the Continent, 97 per cent of the invoice value is drawn against the bank. Exports to foreign countries are not financed by importers except in the case of loans given by London firms to some of the planters. This has been discussed in the chapter on Assembling.

E.—Cost of distribution.

The distribution charges vary in different areas according to the channels through which coffee passes to the consumer and the distance of transport. In cases where the planter sells direct to the manufacturer or through the curer the only items of the cost of distribution are cartage and handling, curing charges and curer's selling commission. As regards coffee sold to itinerant vendors the cost of handling and peeling and the hire for employing cooly to take the headloads constitute the entire cost of distribution. However, the quantities sold to the manufacturer or the itinerant vendors form a small proportion of the total crop.

The distribution costs fall under two main heads, viz. :—

(a) Railway or steamer freight to destination.

(b) Distribution charges.

(a) The railway and steamer (coastal) freights in the case of raw beans are usually paid by the consignee or commission agent at the destination. The freight on manufactured coffee, is paid by the manufacturer. In the case of exports most of the shipments are booked on c. i. f. terms.

(b) The distribution charges depend on the various intermediaries through whom coffee gets to the consumer. The charges are met by wholesalers, commission agents and retailers at different stages in the course of the transaction.

Mangalore.—The wholesale merchants of coffee in Mangalore have to meet the following charges for coffee purchased from the curer and sold to retailers in the town :—

	(Per cwt.) Rs. A. P.
Carting and handling from curer's godown	0 1 6
Bulking, garbling and weighing	0 6 3
Fire insurance for the godown	0 0 6
Brokerage at Rs. 0.4-0 per Rs. 100	0 1 4
Loss in sampling	0 0 3
Total	0 9 10

The retailer in Mangalore has to meet the following expenses :—

	(Per cwt.) Rs. A. P.
Cost of bags	0 3 0
Cost of stitching bags	0 0 4
Seller's discount	0 2 6
Carting to retailer's godown	0 1 6
Bulking and re-garbling	0 2 0
Total	0 9 4

Between the wholesaler and retailer the cost of local distribution amounts to Rs. 1-3-2. This does not include the profit which the wholesaler makes out of the transaction.

Calicut.—The following charges are incurred by whole-salers in Calicut :—

	(Per cwt.)
	Rs. A. P.
Charity	0 0 3
Brokerage at Re. 0-4-0 per Rs. 100	0 1 0
Cost of bags and packing charges	0 4 0
Cartage to godown and handling	0 0 6
Re-bulking and garbling	0 6 0
Total	0 11 9

The retailer has to pay the following :—

	(Per cwt.)
	Rs. A. P.
Charity (1 anna per candy)	0 0 3
Carting and handling	0 0 6
Re-bulking and garbling	0 2 0
Total	0 2 9

In Virudhunagar the distributing costs appear to be higher.

The wholesalers have to meet the following charges :—

	(Per cwt.)
	Rs. A. P.
Weighing and bagging including cost of bags	0 3 6
Charity	0 0 3
Cartage	0 0 9
Brokerage	0 1 0
Re-bulking and grading	0 6 0
Total	0 11 6

The retailer has to pay the following :—

	(Per cwt.)
	Rs. A. P.
Cartage	0 0 9
Brokerage	0 1 0
Re-bulking and garbling	0 2 0
Charity	0 0 3
Total	0 4 0

The cost of distribution in Bombay is as under :—

	(Per cwt.)
	Rs. A. P.
Landing and clearing charges	0 1 6.
Cartage to wholesaler's godown	0 0 9
Commission to commission agent	0 8 0.
Godown insurance	0 1 6
Godown rent	0 1 0
Vatav (cash deduction allowed to <i>dalals</i>)	0 3 6
Dalali (when bags are sold through local <i>dalal</i>)	0 3 0
Mukada (actual for unloading, carting and <i>dharma</i>)	0 0 3
Total	1 3 6

And when *mofussil* merchants purchase from commission agents the following further costs are defrayed by the buyer :—

	(Per cwt.)
	Rs. A. P.
Vatav	0 8 0
Dalali	0 8 0
Bardan deduction for bags (4 lb. per bag)	0 8 0
Total	1 8 0

In Calcutta the distribution costs are as under :—

	(Per cwt.)
	Rs. A. P.
Landing charges, i.e., unloading from the steamer stack in the shed	0 0 9
River dues	0 12 0.
Unofficial charges at the port	0 5 6.
Brokerage	0 4 0
Carting charges	0 2 3
Godown rent	0 2 0
Insurance	0 1 3
Arotdari	0 8 0
Total	2 3 9

The distribution costs in Karachi seem to be particularly high, and work out as under :—

	Rs. A. P.
Landing and sundry charges	0 2 0 Per cwt.
Terminal tax	0 0 4 „
Customs pass and bill	1 10 0 Per bill.
Cartage and weighing	0 6 0 Per cwt.
Brokerage	0 2 6 „
Discount	0 8 0 „
Interest (at 0-6-0 per cent)	0 2 0 „
Godown rent	0 2 0 „
Sayak fund	0 0 3 „
Charity fund	0 0 4 „
Total	3 1 5

The following table shows the consolidated cost of distribution from wholesalers to retailers in some of the centres of distribution :—

	(Per cwt.) Rs. A. P.
Mangalore	1 3 2
Calicut	0 14 6
Virudhunagar	0 15 6
Bombay	2 11 6
Calcutta	2 3 9
Karachi	3 1 5

F.—Price spread.

The following is a typical example of the average assembling and distributing costs in the case of “ Plantation ” coffee exported by the curer to the United Kingdom :—

Price spread of arabica “ Plantation ” coffee exported from Mangalore to United Kingdom.

	Amount. (Per cwt.) Rs. A. P.	Percentage.
Amount realised by planter	31 0 0	67·5
Transport charges from plantation to the curing yard including handling	1 10 0	3·5
Curing charges	1 15 0	4·2
Charges for packing	0 6 0	·8
Market charges	0 14 6	1·9
Wholesaler's margin	2 8 0	5·4
*Coffee cess	0 8 0	1·1
Freight and handling at ports	2 13 6	6·2
Selling expenses abroad	4 9 3	9·4
Price realised in U. K.	46 4 3	100·0

* Subsequently raised to Re. 1 per cent.

Thus a planter free from all encumbrances realises about 67·5 per cent of the price paid by wholesale buyers in England. More than 75 per cent of the plantations is however encumbered and the additional charges are not taken into account. About 32 per cent of the gross price is spent on the services rendered by the different agencies in the chain of distribution.

The planter's share of the wholesale price paid by the importer in Havre for "Cherry" (Native) coffee sold by the curer in Mangalore is smaller than for plantation sold in the London market. The following is a typical instance taken from a wholesale merchant in Mangalore :—

Price spread of "Cherry" (Native) coffee exported to Havre.

	Amount. (Per cwt.)	Percentage.
	Rs. A. P.	
Amount realised by planter	21 14 2	60·8
Transport and handling charges	1 10 0	4·5
Curing and re-garbling charges	2 7 9	6·9
Market charges	0 15 10	2·7
Wholesaler's margin	3 5 9	9·4
*Coffee cess	0 8 0	1·4
Packing	0 6 0	1·0
Freight and handling at ports	3 1 0	8·5
Selling expenses abroad	1 11 6	4·8
Price paid by importer	36 0 0	100·0

The planter thus realises only about 60 per cent of the price paid by the wholesale merchants in Havre.

As regards estates which are hypothecated they have to pay an interest of 9 per cent and an extra sales commission of $1\frac{1}{4}$ per cent to the curers which amounts to a reduction of 3 to 4 per cent in the planters' share.

For coffee sold in India through the curer, the average distribution costs are as under :—

Price spread of arabica "Plantation" coffee sold in Mangalore.

	Amount. (Per cwt.)	Percentage.
	Rs. A. P.	
Amount realised by planter	27 11 10	66·0
Transport charges from plantation to curing yard including handling	1 13 0	4·3
Curing and re-grading charges	2 9 0	6·1
Market charges	1 3 2	2·8
Packing and packages	0 6 4	1·0
Wholesaler's margin	2 8 0	5·9
Retailer's margin	5 13 0	13·9
Total	42 0 4	100·0

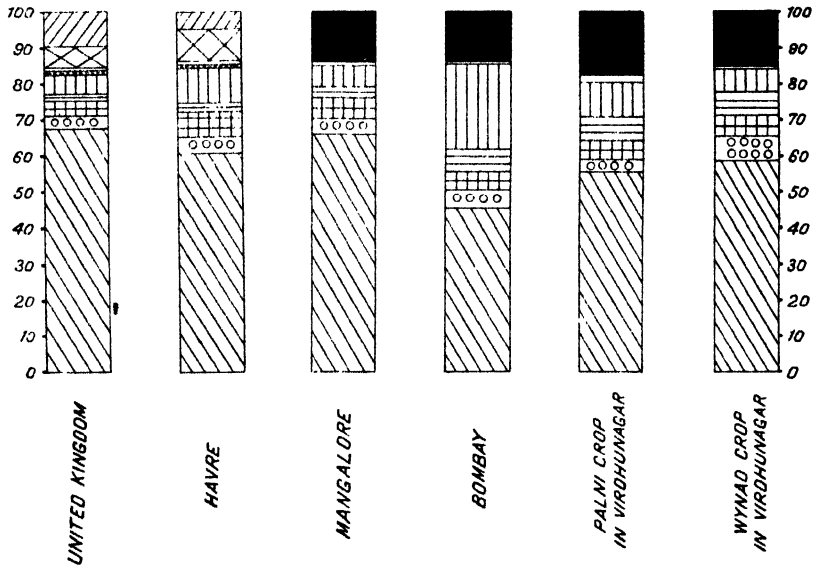
* Subsequently raised to Re. 1 per cent.

PRICE SPREADS OF RAW COFFEE.

REFERENCES:-

WHOLESALE'S MARGIN			COFFEE CESS
MARKET CHARGES			PACKING & HANDLING
CURING CHARGES			FREIGHT
TRANSPORTATION & HANDLING			SELLING EXPENSES ABROAD
PLANTER'S SHARE			RETAILER'S MARGIN

(PERCENT)



The planter gets about 66·0 per cent of the price paid by the local consumer in Mangalore. The wholesaler takes about 6 per cent and the retailer 14 per cent.

The following is an instance of the price spread of Palni coffee sold in Virudhunagar :—

Distribution cost of Palni coffee sold through commission agents in Virudhunagar.

	Amount. (Per cwt.)	Percentage.
	Rs. A. P.	
Amount realised by planter	23 6 1	55·5
Transportation and handling	1 6 8	3·4
Curing and re-garbling	2 2 9	5·2
Market charges	2 10 9	6·5
Packing charges and packing	0 13 6	2·0
Wholesaler's charges	4 0 3	9·6
Retailer's charges	7 8 0	17·8
Total	42 0 0	100·0

The planter gets only about 55·5 per cent of the price paid by the consumer. Out of this amount the planter has usually to meet interest of about 9 to 12 per cent on loans advanced by the commission agent, so that his share is still less. The wholesale distributor gets about 10 per cent and the retailer 18 per cent. Grading and polishing accounts for about 2 per cent of the gross price.

The following is a typical example of distribution cost of *robusta* from Wynaad :—

Distribution cost of Wynaad robusta sold to Virudhunagar wholesaler.

	(Per cwt.)	Percentage.
	Rs. A. P.	
Amount realised by planter	17 7 3	58·5
Transportation and handling	1 14 0	6·6
Curing and re-garbling	1 12 0	5·9
Market charges	1 14 9	6·7
Packing charges and packing	0 4 0	0·8
Wholesaler's charges	1 13 0	6·3
Retailer's charges	4 8 6	15·2
Total	29 7 6	100·0

The planter in Wynaad gets about 58·5 per cent of the price paid by the consumer at Virudhunagar. This does not include the heavy rates of interest which he has usually to pay. It will, under normal circumstances, result in a deduction of another 7 to 8 per cent from his return.

A typical example of the price spread on coffee sold in Bombay is as under :—

	Amount. (Per cwt.)	Percentage.
	Rs. A. P.	
Amount realised by planter	25 8 5	45·6
Transporting and handling	3 0 10	5·3
Curing and re-garbling	2 11 0	4·9
Market charges	3 5 6	6·0
Packing	0 6 0	0·7
Wholesaler's charges	13 4 3	23·7
Retailer's charges	7 12 0	13·8
Total	56 0 0	100·0

The producer gets only 45·6 per cent of the price paid by the consumer.

A study of these price spreads (see diagram facing page 232) leads to the following conclusions :—

- (a) Higher proportionate returns for the producers who sell their coffee in London.
 - (b) The relatively poor returns received by producers on coffee shipped to other Continental markets.
- This indicates the need for better organisation of the sale of Indian coffee in such markets.
- (c) High cost of distribution—apart from freight—in respect of coffee sold in the internal market in India, which indicates scope for the organisation of more direct contact between producers and retailers either individually or by organised companies or co-operative societies.
 - (d) Waste in the form of unnecessary charges for sampling, re-garbling re-grading and polishing, all of which could be eliminated by adoption of standard grades.

While the planter in Palni gets 55·5 per cent of the consumer's price for coffee sold in Virudhunagar and those in Mysore and Coorg get 66 per cent of the consumer's price in Mangalore, the return to the planter out of the price paid by the consumer in Bombay is only about 46 per cent. In some of the towns in the North, the octroi charges are also fairly high. Appendix XLV gives the octroi charges in some of the important towns. Cambay leads with Rs. 3 per maund. In Nizam's Dominions a five per cent *ad valorem* duty is charged on all coffee entering the State.

G.—Burma.

The following table shows the distribution of the consumer's price in the case of Burma coffee :—

Price spread of coffee in Burma for 100 viss (360 lb.).

	Rs. A. P.	Percentage.
Amount realised by grower	49 6 0	55·8
Cost of preparation	1 2 0	1·3
Bazár tax paid in the village market at Re. 0-2-0 per 100 viss	0 4 0	0·3
Village trader's margin including the difference in weight	5 0 0	5·7
Transport charges from Pinlaung to Aungban .	2 8 0	2·8
Re-garbling and grading	1 8 0	1·7
Wholesaler's margin	2 4 0	2·5
Bagging, sewing and weighing	0 2 6	0·2
Transport charges to Rangoon	3 8 0	4·0
Cost of bags	0 9 0	0·6
Brokerage at Rangoon	1 0 0	1·1
Wholesaler's margin at Rangoon	2 4 6	2·6
Brokerage	1 0 0	1·1
Retailer's margin	18 0 0	20·3
Price paid by consumer	88 8 0	100·0

The planters in Burma get about 56 per cent of the price paid by the consumer in Rangoon.

Wholesale distribution of raw coffee.]

INTER-CHAPTER NINE.

Coffee is distributed by the following agencies:— (1) Planters, (2) Itinerant vendors, (3) Curers and commission agents, (4) Co-operative organisations and (5) Wholesale distributors.

On account of the depression in prices some planters have of late been trying to deal with retailers direct in the hope of getting better prices. It appears that some of them have obtained better prices in this way. The coffee distributed directly by planters would not however, exceed 3,000 cwt. a season.

A small portion of the crop is distributed by itinerant vendors. They purchase from planters and sell to retailers and, in some cases, to consumers. Most of the *robusta* crop in Travancore is collected by these village traders and distributed to buyers in Virudhunagar, Coimbatore and other internal markets.

The curers and commission agents assemble and distribute about three fourths of the total crop. The curers effect sales through brokers or direct to manufacturers. The curers in Coimbatore retail a considerable quantity of coffee through their agents in the chief consuming centres in the South.

The Coffee Growers' Association of India was inaugurated in 1931 to work for better prices of coffee, to establish a central agency for the sale of coffee and to combine all coffee growers into one association. In actual practice, the work of the association was mostly confined to advertising and propaganda.

The Shevaroy Coffee Growers' Company was another attempt by the planters to market their coffee. They bought coffee from the planters at the market rates and either sold it in the form of raw beans or converted it into coffee powder. The tins and paper packets prepared by them were sold under the caption "Summit Coffee Works". Their sales have gradually gone down and they have not made any impression on the market.

Many consumers' co-operative stores in the South and the co-operative stores organised by the South Indian community in Bombay, Poona, Delhi and Simla sell coffee in retail along with other provisions. They get their requirements from the curers or wholesale distributors and make no attempt to buy direct from planters or growers' co-operative societies.

The wholesale distributors purchase coffee from planters, curers or commission agents and sell it to retailers or wholesalers in other distributing centres. Some wholesale distributors keep travelling salesmen who visit consuming centres and book orders from the wholesalers, coffee clubs and retailers. They are paid a commission of 1 to $2\frac{1}{2}$ per cent on sales.

The London market is an important distributing centre and the London trade is largely done in coffee known in the trade as "Home Trade" quality, *i.e.*, coffee from particular plantations having special "Estate marks". Most of the shipments are made on a consignment basis. Sales of high quality coffee are also made on samples or actual description mentioning the name of the estate and the "Estate mark". Coffee sent on consignment basis is usually sold by public auction through agents in Mincing Lane. Auctions are held generally on Tuesday, Wednesday, Thursday and Friday. Sometime before the auction, samples are exhibited for inspection and a small standard quantity from each sample is roasted, ground and prepared for drinking. The expert tasters taste each of a large number of samples in turn and make notes for valuation. The actual selling is done by competitive bidding. When the highest bid is accepted, the selling broker sends a Sale Note to the selling agent and a Bought Note to the buying broker.

The planters and exporters are charged a selling commission of $1\frac{1}{2}$ per cent and a brokerage of 1 per cent. The buyer has to pay $\frac{1}{2}$ per cent brokerage but he receives a discount of 1 per cent besides draftage and an allowance for loss in weight of $\frac{1}{2}$ per cent. Transactions in London market are generally subject to the rules of the London Coffee Trade Association.

In the case of quality coffees, open sale in public auctions is perhaps the best method of ensuring the maximum return to the planter. But in the case of lower grades and of coffee that has no special reputation on the London market, sale by auction involves a certain amount of risk. Such coffee is therefore often sold on sample and "description to arrive". This is perhaps the most successful method of marketing bulk coffee. It, however, presupposes systematic grading accepted by the exporters and buyers and also a regular supply on large scale.

When the total estimated quantity of crop is sold forward the seller gets the option to ship an extra 10 per cent. The sales for forward delivery are made on *c. i. f.* basis. Disputes arising out of the contract are settled by arbitration and the acceptance and enforcement of arbitration is actionable in a court of law.

Unlike the London Tea Brckers' Association, no official bulletin is published by the coffee trade in London. The periodical circulars issued by the agents deal mainly with coffees from India and do not contain any information about competitive coffees, *e.g.*, from East Africa and Costa Rica. The need for fuller information is being keenly felt on account of the increasing competition from other countries.

Havre is one of the important coffee markets in Europe. Coffee is generally sold on "description to arrive" basis. Fair average quality of the season at the time of shipment is the usual basis on which transactions are made. Standards vary from shipper to shipper but buyers, it is said, know the standards of individual shippers and this is why samples are not usually sent. The necessity for standardising grades is greater in the case of Native "Cherry" coffee than for plantation. However, some exporters transact business after sending samples in the beginning of February, so that the fair average quality of the season may be made known to the French importers. There are no auctions except for damaged coffee. Futures are dealt with on the Havre Bourse.

In the case of difference between seller and buyer, the weight taken by the sworn official weighers employed by the Customs Department is the final record which is referred to. The buyer's representative is usually present at landing and samples drawn from about 5 per cent of the shipment are sealed in case the buyer or the agent of the seller finds that they are below the description given. Any claim on quality, etc., has to be preferred within the stipulated time of the landing of the goods. Arbitration in Havre is considered fair and satisfactory. While some exporters stipulate Havre arbitration, others mention London arbitration. The claims usually involved are from six pence to 1 *sh.* per cwt.

From September 1939, the War upset all existing arrangements. Before the War, Germany had clearing arrangements with Brazil, Colombia, Costa Rica, Guatemala and other coffee producing countries. Forward transactions were only carried out in the case of Brazilian coffee.

In Norway, business is transacted through agents whose number had lately increased considerably. Shipments were made on the basis of fair average quality of the season as represented by total exports at the time of shipment. Instances of claims for arbitration were rare. The arbitration was usually referred to Havre though some shippers stipulated London arbitration.

There was keen competition in Norway for securing agencies for import business. Due to this competition, some undesirable tendencies appear to have crept in. Instances of agents backing out of transactions in cases of an increase of price were common. Combined action by shippers in India would, to a certain extent, help in eliminating such undesirables from the trade.

Though the exports to the United States of America are negligible, it is one of the biggest potential markets for Indian coffee. The "spot" market in New York deals with actual coffee in the warehouses. In order to prevent the shipment of low grade coffee the seller has to forward a certificate stating that the consignment has not been adulterated and is in accordance with the provisions of the Food and Drugs Act of the United States. "Mild" coffees are not usually bought on a cost and freight basis. They are purchased on type or sample on the basis of landed weight.

There is a fair element of South Indians populated in South Africa. There is, therefore, a very good chance for the Indian coffee shippers to come in contact with the Indian merchants in South Africa and to explore the possibilities of the market in that country. The requirements of the coffee market in Canada are well known to the London wholesale coffee merchants, but the tendency during the past few years has been to import from the country of origin direct. The Indian planters and shippers should explore the possibility of tackling the Canadian market through their London agents and also by establishing direct contact with the trade in Canada.

The wholesale distributors in the South get loans from local joint stock banks on the security of the stocks which are kept under the control of the bank. In the case of exports to the Continent, 97 per cent of the invoice value is drawn against the bank.

The distributive margin varies in the different areas according to the channels through which coffee passes to the consumer and the distance of transport. For example, a planter free from all encumbrances realises about 67·5 per cent of the price paid by wholesale buyers in England. More than 75 per cent of the plantations are, however, encumbered. About 31 per cent of the gross price is spent on the services rendered by the different agencies in the chain of distribution. Out of the price paid by the wholesale merchants in Havre, the planter realises only about 60 per cent. Estates which are hypothecated have

to pay to the curers interest at the rate of 9 per cent and an extra sales commission of $1\frac{1}{4}$ per cent. This results in a reduction of 3 to 4 per cent in the planters' share.

In India of the price paid by the local consumer in Mangalore, the planter gets about 66·0 per cent. The wholesaler takes about 6 per cent and the retailer 14 per cent. In Virudhunagar the share of the planter comes to only about 55·5 per cent. Out of this amount the planter has usually to meet interest of about 9 to 12 per cent on loans advanced by the commission agent, so that his share actually comes to still less. The wholesale distributor gets about 10 per cent and the retailer 18 per cent. Grading and polishing accounts for about 2 per cent of the gross price. The planter in Wynaad gets about 58·5 per cent of the price paid by the consumer at Virudhunagar. This does not include the heavy rate of interest which usually results in a deduction of another 7 to 8 per cent from his return.

While the planter in Palni gets 55·5 per cent of the consumer's price for coffee sold in Virudhunagar, and those in Mysore and Coorg get 66 per cent of the consumer's price in Mangalore, the return to the planter out of the price paid by the consumer in Bombay is only about 46 per cent. This indicates the need for better organisation of the sale of coffee.

In some of the towns in the North, the octroi charges are also fairly high. Cambay leads with Rs. 3 per maund. In Nizam's Dominions, a five per cent *ad valorem* duty is charged on all coffee entering the State.

A study of the price spreads in the various markets leads to the following conclusions :—

(a) Higher proportionate returns for the producers who sell their coffee in London.

(b) Relatively poor returns received by producers on coffee shipped to other Continental markets. (Better organisation is necessary for the sale of Indian coffee in such markets).

(c) High cost of distribution, apart from railway freight, in respect of coffee sold in the internal markets in India. (This indicates the scope for the organisation of more direct contact between producers and retailers either individually or by organised companies or co-operative societies).

(d) Waste in the form of unnecessary charges for sampling, re-garbling, re-grading and polishing. (This can be eliminated by the adoption of standard grades).

CHAPTER X.—MANUFACTURE AND DISTRIBUTION OF COFFEE PRODUCTS.

A.—Manufacture of coffee products.

(1) ROASTING.

Methods.—Coffee undergoes essential physical and chemical changes in the process of roasting, the effect of which is to vapourise the water content, volatilize a small quantity of theine, caramolise sugar, break the cell layers containing fat and albumen and swell the bean by the liberation of gases.

A great deal of the liquoring quality of coffee in the cup depends on correct roasting and therefore the art of roasting requires special skill and considerable experience. In all the coffee consuming countries, roasting is entrusted to specialists in the trade as different growths of coffee and varying tastes of consumers require different degrees of roasting.

According to Ukers, the dried hulls and green beans were first roasted in clay dishes sometime between the year 1200 and 1300 B. C. The clay vessels gave place to metal ones which appears to have been first used in Turkey and Persia. The first cylindrical metal roaster appeared in 1650 A. D.

In India in the chief consuming centres like Madras Presidency, Coorg and Mysore State, the consumers do a large amount of roasting usually in flat iron pans. About a lb. is usually roasted at a time. The beans are put in the pans and stirred with iron spoons. The consumers in the South prefer dark roast. The samples drawn from the Madras Presidency and Mysore State were found to have been roasted up to charring point. After roasting the beans are spread on the floor for cooling.

Most of the manufacturers in the South use drums with perforated sides for roasting coffee. [The charge ranges from 25 to 60 lb., varying with the capacity of the drum. These drums are fitted horizontally on a stand and are rotated by hand over an open fire during roasting. The beans get roasted in 15 to 30 minutes depending on the moisture content etc. in the bean. After roasting, the beans are spread on iron plates or wooden planks for cooling and are vigorously fanned by coolies. Some of the manufacturers mix sand with the beans during the process of roasting ostensibly to get an even roast. The use of electric roasters having a capacity of 2 to 10 lb. is increasing. The cost of these roasters varies from Rs. 200 to Rs. 1,000. Electric coils are fitted on a carrier in the centre of a drum horizontally fitted (see plate facing page 208). The drum is set in motion at a given speed. For testing the roast a spoon is fitted to the side of the drum. When the beans are roasted to the standard colour the current is switched off and the machine is stopped. An aperture is opened and the beans drop into a closed container. A fan, fitted under the container, is worked for cooling the berries. In some of the towns in the North like Peshawar, Rawalpindi, Amritsar and Karachi the country iron pans used for roasting ground-nuts, gram, maize and jowar and other grains are used for roasting coffee. In Sind *ret* or sand weighing about $1\frac{1}{2}$ to 2 seers is first put into the pan and heated for about 10 minutes after which the beans are put in the pan and mixed with the sand by a handle or *kawer*. It is believed that this process helps to quicken the speed of roasting and also to remove any silver skin which may be sticking to the bean. As the sand is well heated before coffee is put in, it takes only from 8 to 12 minutes to roast each batch of coffee. There is a loss of about quarter seer of sand each time and it is replenished from the heap lying nearby. In Cochin State the beans are roasted in shallow iron pans.

These are continuously stirred and when the beans begin to split, they are taken out and spread on the floor for cooling.

Some of the manufacturers keep the roasted coffee in zinc coated iron drums while others keep it in second hand kerosene oil tins.]

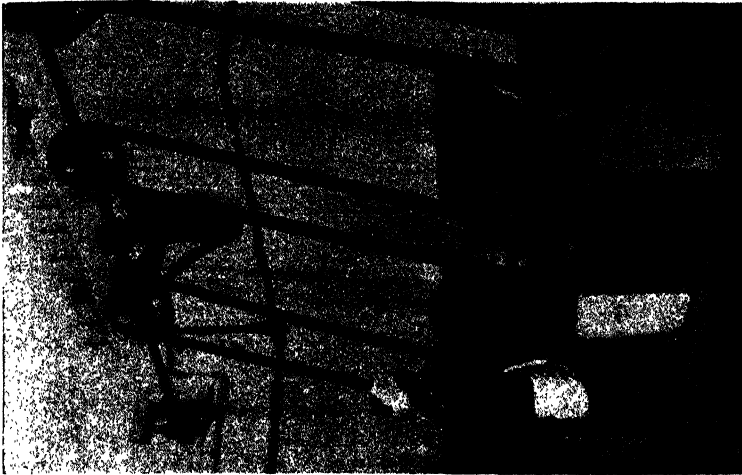
Large scale roasting supervised by specialists is a common feature of the coffee trade in other parts of the world. But in the North roasting is mostly done by novices in the trade and consequently the complaints of unevenly roasted beans, too light or too dark roasts are not uncommon. The man in charge has little or no special training in the art of roasting. As the quality in the cup depends greatly on proper roasting the trade must pay increasing attention to this.

[The bigger factories use either gas or coke for roasting and most of the smaller ones use firewood and some coke. The beans are placed in iron drums, the capacity of which ranges from 50 to 1,000 lb. The drum has a number of holes through which the gas escapes. Others use open iron bins for roasting (see plate facing page 147). The bins in the case of bigger factories are set in motion at a prescribed speed. Each batch of roast takes from 20 to 40 minutes depending on the nature and condition of the bean. Although some of the roasting machines are equipped with automatic gears for roasting coffee weighing 112 lb. to a definite weight such as 92, 94, or 96 lb., the system of roasting by the "eye" to a standard colour is followed. The different types and grades are separately roasted as the beans may contain different moisture contents and have to be roasted for varying periods to get the same results. The roasted beans are gathered in bags and spread out for cooling either on iron sheets or wooden planks and they are fanned for about 10 to 15 minutes. After cooling, the different grades and types are mixed in ordinary barrels according to certain specified proportions. Some manufacturers bulk the coffee on the floor by raking and mixing. Immediate cooling serves to preserve the caffeol contents which supply the flavour and aroma to the coffee in the cup. Cool air closes the pores by shrinking the outside surface and sealing the berry and the volatile essences are less volatile when the berries are cold. The more rapidly the beans are cooled the better the keeping qualities of the roasted bean. The beans are then packed in tins preferably under inert gas (see plate facing this page).

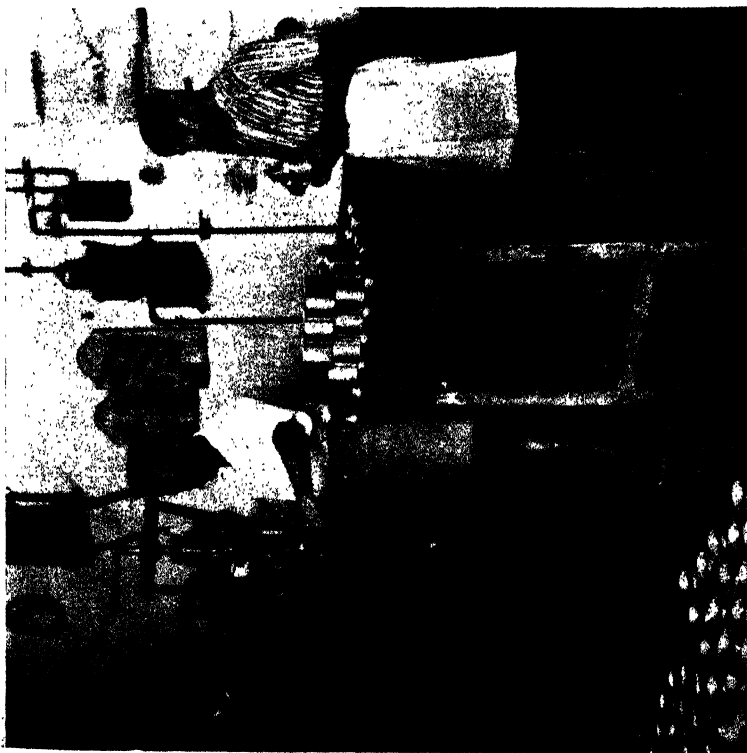
The loss in weight in roasting depends mostly on the quality of the bean and the degree of roasting. Other conditions being the same, roasted to a yellowish-brown hue coffee loses about 12 to 15 per cent in weight, to chestnut brown about 18 to 20 per cent and to dark brown 23 to 25 per cent. The loss in weight in roasting of Indian coffee ranges from 10 to 50 per cent. In some of the poorly prepared Assam coffee containing a large quantity of moisture it was found to be as high as 50 per cent. The average loss in weight however was found to be from 15 to 20 per cent.]

(2) GRINDING.

Methods.—For grinding roasted beans the consumers in the South either use mortar and pestle or small grinding machines which are turned by hand and cost from Rs. 3 to Rs. 6. Dealers selling freshly ground coffee use either grinding machines operated by hand or electric grinders. The machines turned by hand are similar to those used by consumers. Only in some cases they are larger costing about Rs. 15. It takes about 5 minutes to grind a lb. of coffee in these machines. Hand machines are used largely by South Indian Coffee restaurants all over India and also by some of the European hotels who buy roasted beans.



Grinding.



CO₂ gas packing.

Facing page 243.]



India Coffee House, Bombay.

Electric grinders (see plate facing page 208) are getting common in towns and are popular on account of their simplicity and quick service. They cost from Rs. 150 to Rs. 500. Roasted beans are placed in a glass receptacle attached to the grinder. The bottom portion of the glass jar opens automatically when the machine is set in motion. The beans are ground fine, medium or coarse according to the wish of the consumer by an adjustment in the grinder. The grinders in the bigger factories are worked by oil or steam engines at a regulated speed (see plate facing page 242). The capacity of the grinders ranges from 50 to 1,000 lb. per hour. Some of the manufacturers grind their coffee into three sizes, *i.e.*, fine, medium and coarse and mix the powder according to certain proportion.

Analysis of samples of ground coffee showed that even the leading manufacturers have not standardised the grind. Different samples of the same brand of tinned coffee had the following different proportions of granules :—

	Samples.			
	A	B	C	D
	(Per cent)			
Less than 20 meshes per inch . .	13	13	14	8.5
Less than 40 meshes per inch . .	47.5	67.0	48.3	38.5
Less than 60 meshes per inch . .	34.5	15.5	16.7	30.0
Less than 80 meshes per inch . .	3.5	3.0	19.5	22.5
Loss in sieving	1.5	1.5	1.5	0.5

(3) BLENDING.

(a) "*Pure*" coffee.—A knowledge of the different characteristics of the various types and grades of coffee produced in different areas is necessary for blending. Some coffees are thick, rich and pungent, while others are thin and lacking in aroma. Strength, flavour, aroma and acidity are the chief elements that go to make up a good cup and blending serves to bring out these to the best. Water in the locality in which the particular blends are sold has also its bearing on the success of the blends. But excepting for two or three big manufacturers, the others have no fixed standards for blending.

The factories usually have stocks lasting for a year. Blending of coffee is a closely guarded secret and the manufacturers are least communicative about this aspect of the trade. Most of them, however, seem to purchase at random, price being the major determining factor. Cheap priced blends are turned out in large quantities. A standard flavour and a standard liquor are the objectives of very few manufacturers.

The best tinned "pure" coffee is a blend of plantation "A" and "B". But this apparently forms only a small proportion of the output. The estimated

purchases of one comparatively large manufacturer, for example, were as under :—

	(Per cent)
Plantation "Triage"	26·0
Cherry	26·0
<i>Robusta</i>	26·0
Plantation "A"	20·7
Plantation "B"	1·3
	100·0

"Triage" is being used very largely by most of the manufacturers in all the blends. One manufacturer who prepares only "pure" coffee confined his purchases to "Triage". A second bought only "C" and "Triage". The smaller manufacturers invariably use cherry, "Triage" and "Blacks and Bits" or *robusta* for all their blends. The different types and grades are roasted separately by some manufacturers and then mixed and ground. Others grind the different types separately and mix after grinding by revolving the powder in cylindrical drums.

(b) *Chicory and other admixtures.*—(i) *Extent.*—The examination of samples of manufactured coffee drawn from different parts of India reveals an appalling state of affairs. Ground coffee packages costing from Re. 0-2-0 to Rs. 2 per lb. are being sold as genuine and "pure" coffee. The percentage of coffee in a good many of them is below one-fifth of the contents. The unrestricted sale of these admixtures is one of the biggest impediments to the expansion of coffee market in India. A person taking coffee for the first time, if he chances to taste one of these mixtures, may never come any where near coffee a second time.

The proportion of the adulterants and the nature of the admixture is seldom mentioned on the label and in cases, where it is mentioned, it is obscurely placed. Many of the packages containing admixture of chicory have only the caption "French" coffee. To a big majority of consumers the term "French" conveys little or no meaning. Some believe that it means coffee imported from France and others think that it is a trade term for some kind of superior coffee. Not even 1 per cent understand the significance of the word "French" as used by coffee manufacturers. More than 70 per cent of the adulterated packages are claimed to be "pure" coffee, and the degree of admixture in the so called "pure" packages ranged from 0 to 68·50 per cent. Even the declarations on the labels which mention the presence of chicory do not give the proportion. More than half of such samples contain admixture exceeding 50 per cent and in some cases going up to as much as 90 per cent. The quality in the cup of the majority of the samples was, therefore, poor. On the basis of liquoring test less than one-twentieth of the ground coffees in India were found to be of first quality and about one-fifth did not score any points. Most of them were found to be unfit for sale as coffee.

(ii) *Nature of admixtures—Chicory.*—Chicory is the chief product used in mixtures with ground coffee. It is usually imported in powder form in steel barrels, having a capacity of 112 to 132 lb. net each. The supplies chiefly come from Rotterdam, Amsterdam, Antwerp, London and Germany. Madras imports about 7,000 cwt. of chicory and Bombay about 3,000 cwt. The imports into Karachi are negligible. Calcutta imports about 90 cwt. annually. On the whole, about 10,000 cwt. of chicory are imported every year. The imports coming through Madras and Tuticorin ports are distributed to manufacturing centres like Coimbatore, Salem, Mangalore and Virudhunagar and also coffee consuming centres such as Madura, Tinnevely, Trichinopoly, etc.

Chicory is widely used for admixture as its presence is difficult to detect by the ordinary person and it gives more body to the cup. The coffee hotels and restaurants in the Madras Presidency add 10 to 15 per cent of chicory in preparing coffee. Chicory is mixed in varying proportions in all lower grades of coffee powders and in tablets. In Mysore State, the adulteration of coffee with chicory is practically universal in all inferior ground coffees. Most of the hotel keepers also use it.

Some of the coffee mixtures manufactured in Bombay were found to contain as much as 98 per cent chicory. The large majority of blends contain 40 to 80 per cent chicory, and the average of the samples drawn in most areas was 73 per cent. Some coffee drinkers prefer the addition of chicory and purchase coffee and chicory separately and ask the retailer to mix them usually in the proportion of an ounce to 1 lb. of coffee.

In Bengal, it appears that a good number of high class customers like a pinch of chicory in coffee. About 2 oz. to a lb. is said to be the normal proportion.

In the Punjab, only one small concern does some blending. In the "French" or "Hotel" blend they mix 28 per cent chicory and in, what is called, "Household" blend about 50 per cent.

In Sind, only one dealer was found to be regularly mixing chicory with coffee.

Cherry husk.—About 6 to 8 thousand cwt. of cherry husk is exported to Aden and Persian Gulf every season.

The South Indian Railway gave special station to station rates for cherry husk from Mangalore to Ernakulam and Tellicherry to Ernakulam, for competing with the Coastal traffic between Mangalore and Cochin and Tellicherry and Cochin. On enquiry it was found that a good quantity of "Blacks and Bits" were often booked as cherry husk for getting the concessional rates. The railway figures have, therefore, to be taken with this limitation. However, it may be estimated that about 10,000 cwt. of cherry husk is used for adulterating coffee.

Travancore is the chief consumer of cherry husk. The following quantities were imported into Travancore in the period mentioned below:—

1935-36	.	.	.	.	.	.	.	.	.	14,400
1936-37	.	.	.	.	.	.	.	.	.	17,000
1937-38	.	.	.	.	.	.	.	.	.	15,600

The working classes in Travancore prepare coffee out of cherry husk. In Mysore State the sale of cherry husk to coffee powder manufacturers appeared to be on the increase. About 6,000 cwt. were shipped to Bombay in 1938-39, a small quantity of which was re-exported to Aden, the balance being used by the manufacturers to prepare coffee. But the appeal of the Indian Coffee Cess Committee has borne good fruit. The Mysore Coffee Husk Control Bill was passed on 6th February 1940, and the Coorg Legislative Council enacted a similar legislation in October, 1939, named the Coorg Coffee Husk Control Act. The Mysore and the Coorg Acts are similar. The import into and export from Mysore or Coorg of coffee husk are prohibited, except with the permission of the respective Governments. Further, no coffee husk may be sold or otherwise disposed of except with the permission of the Governments and subject to such conditions as they may impose. The penal clauses of the Acts provide that the offences under them are punishable with a fine up to Rs. 500. It is hoped that cherry husk, as an adulterant, will thus

lose much of its importance. If the sale of cherry husk is completely stopped, the coffee industry should be able to displace about 25,000 cwt. of coffee in lieu of husk.

Other adulterants.—Bengal gram, *Cassia tora* (*Kuvadiah*) seed from a shrub commonly found grown as weed in fields, oilseeds, burnt sugar, tamarind seed, and saw dust are some of the other adulterants used. Tamarind seeds roasted and powdered are used in coffee hotels all over the Madras Presidency. Roasted tamarind seeds are sent to Virudhunagar, Coimbatore and other districts and the manufacturers also use them for preparing tablet coffee and inferior powder. Some of the manufacturers who sell ground coffee mix mango saw dust. It is stated that on account of the difficulty of obtaining imports of chicory, *Cassia tora* (*Kuvadiah*) seeds were widely used by manufacturers in the Bombay Presidency during 1914-18 War. It is possible that history might repeat itself, especially as this is one of the adulterants which it is difficult to distinguish by physical or even chemical means.

(4) TABLETS.

The beans are roasted and ground in the same way as for manufacturing ground coffee in packages. Ground coffee is mixed with chicory powder, the proportion depending on the manufacturer. The mixture is then put in an automatic pressing machine and pressed into tablets. The size and shape of the tablets vary with the manufacturer. Some tablet manufacturers do not add any binding material, but others add about 15 per cent glucose.

(5) COFFEE EXTRACTS AND ESSENCES.

The method of making coffee essences was gathered from investigations abroad. Coffee is roasted and cooled and very coarsely ground. It is then placed in large flat cylindrical containers which have a cloth filter at the bottom. Boiling water is poured over the powder and coffee is allowed to stand for an hour. The filtered coffee is taken through pipes and flows into circular containers where it is kept at a temperature of 170°F. under vacuum until the liquid is greatly reduced and boils down to the consistency of a thick syrup. To this sugar is added and diluted with water. The essence is then packed in bottles for sale.

(6) OTHER PRODUCTS.

The manufacture of prepared coffees is an aspect of the industry requiring attention from the manufacturers in India. Prepared coffees placed on the market in different forms should make a wider appeal and eventually bring in a larger number of consumers. For example, preparation of dry coffee extracts might be useful to persons in camp or on picnic. These are said to be popular in the United Kingdom and United States of America.

Some of the preparations which are in demand in the coffee consuming countries are discussed below :—

- (a) *Soluble coffee.*—A heavy liquid is extracted from ground coffee by means of the percolation method. This is evaporated till it is made into a syrup and then dried by means of a vacuum drier. The resulting powder is easily soluble in water.

- (b) *Flaked coffee*.—This is prepared by passing coffee powder under high pressure through a roller mill. It is claimed that ten ounces of flaked coffee give the strength of a lb. of coffee.
- (c) *Coffee syrup*.—Coffee syrups should be popular. Coffee mixed with a proportion of sugar and boiled for about three minutes gives a good coffee syrup.
- (d) *Coffee for flavouring*.—The aromatic qualities of coffee can be utilised for flavouring in any kinds of dessert or confectionery.
- (e) *Oil from coffee grounds*.—It appears that chemical tests conducted in Italy showed that oils can be extracted from coffee grounds on an industrial scale for use in soap manufacture. Grounds thrown away as refuse after preparation of coffee can be treated for extracting oil. The grounds are first dried to remove excess moisture and treated with some solvent as Carbon tetrachloride, Carbon disulphide or ether. The grounds after treatment are said to make good fuel after being dehydrated.

B.—Extent and location of factories.

(1) ROASTED BEANS.

The trade in roasted beans does not exceed 500 cwt. a year. Some European hotels and retail dealers in Northern India purchase their supplies of coffee in this form.

(2) FRESHLY GROUND COFFEE.

There are many firms all over the country engaged in roasting, grinding and selling freshly ground coffee. In the course of the last decade the number of such firms has greatly increased. The use of electric power in the bigger municipalities has tended to increase the number of electric roasters and particularly electric grinders. About 26,000 cwt. of freshly ground coffee are sold in a year. In the South where the consumer usually roasts and grinds his own coffee for daily use, the firms selling freshly ground coffee are making headway. One firm in Madras which was selling about 140 lb. per month in 1931 increased its sales to about 6,000 lb. per month in 1938.

In the Madras Presidency there are about a hundred factories engaged in preparing freshly ground coffee and they put on the market about 70,000 cwt. in a year. In Mysore State there are about 10 electric roasters and 30 electric grinders; besides there are a number of roasters and grinders worked by hand. Of the 39 merchants that use electric grinders only about 10 have electric roasters. In Cochin and Travancore States, the sale of freshly ground coffee is limited to a few merchants in Trichur and Cochin in the Cochin State, and Shencotta, Nagercoil and Trivandrum in Travancore State. Roasting is done usually in cylindrical drums. In Bombay Presidency, there are about 20 electric roasters and a number of electric grinders. There are 9 electric grinders in the Punjab of which four are in Lahore, the others being in Murree, Jullundur, Ambala and Rawalpindi. The United Provinces have five electric grinders and only one electric roaster. Bengal firms have about 10 electric grinders and one or two electric roasters. In all there are about 59 to 60 electric grinders in the Madras Presidency, about 30 in Mysore, 2 in Cochin State, about 20 in Bombay Presidency, 10 in Bengal, 10 in the Punjab, 5 in the United Provinces and 2 in Hyderabad.

(3) "PURE" AND "FRENCH" COFFEE.

About 9,000 to 10,000 cwt. of raw beans are used for preparing "pure" and "French" coffee. There are about 10 major factories preparing "pure" and "French" coffee in packages. They are situated as under :—

Bombay	.	.	.	.	.	.	.	.	.	4
Madras	.	.	.	.	.	.	.	.	.	2
Calcutta	.	.	.	.	.	.	.	.	.	2
Mysore State	.	.	.	.	.	.	.	.	.	1
Ahmedabad	.	.	.	.	.	.	.	.	.	1

Besides the above, there are a large number of smaller factories mostly concentrated in Madras Presidency and Mysore State. About 40 are in Madras Presidency and a dozen in Mysore State. The coffee growers in Shevaroy's have a small factory in Yercaud (Salem district) for manufacturing "Pure" coffee in packages. On account of the slump in coffee prices during the last 5 years some of the planters have taken to roasting, grinding and packing coffee on a small scale. Some of the manufacturers of freshly ground coffee also tin their product and conduct a limited trade locally. Two such firms are situated in Bombay, two in Calcutta and one in Secunderabad.

(4) TABLETS.

About 4 to 5 thousand cwt. of coffee are used for making tablets. The tablets are usually heavily adulterated with admixtures and as they are cheap they are mostly consumed by the working classes and small coffee hotels. There are about a dozen factories in the Madras Presidency manufacturing tablets. The popularity of tablets has brought a leading manufacturer of ground coffee into the field in 1938. Besides the factories in Madras Presidency, Bombay has one. Mysore has no tablet manufacturing factories so far. More than three-fourths of the tablet trade is handled by two firms.

(5) COFFEE EXTRACTS AND ESSENCES.

Coffee essences and extracts are not manufactured for sale. One large confectioner in the Madras Presidency makes his own essence of coffee which is used in the production of toffee, etc. Only about 56 lb. of coffee a year is, however, used in preparing this essence.

C.—Methods adopted in foreign countries in regard to roasting, grinding and blending.

(1) ROASTING AND GRINDING.

In the United Kingdom roasting appliances of small capacity are popular and grocers' shops are often fitted with them. "Unos" roasting outfit having a capacity of 7 to 56 lb. is widely used. Gas or electricity is normally used for roasting. The beans as a rule are roasted much lighter than in other countries. In the ordinary retail trade in England, it is not customary to make any difference in roasting different varieties of coffee. The retailers submit coffee to a uniform temperature in roasting and consequently the results obtained on one batch may be different from another.

Retail roasting in the United States appears to be smaller than in other coffee drinking countries. Gas fuel is used on account of its lower cost than coal. Electric appliances for roasting are not much in favour. The beans

are roasted high. This is done partly to hide light berries and also to make a more handsome and showy appearance. The large scale roasting machines in America have more automatic features than those used in Europe. In most of the Continental countries coffee is roasted higher than in England, while in Scandinavia it is almost burnt, approximating to South Indian roasting. In Germany and Scandinavia gas roasting is more popular while in France coke fuel is preferred. Electric roasters are not so common. The roasters both in Europe and America have generally the heater outside the container and heat is directed around and through the drum and this is said to regulate the heat better than the direct method and give a better roast.

There is a considerable difference of opinion among the manufacturers in America and Europe, where roasting and grinding are done by experienced specialists in the trade, as to whether rapid roasting gives better results than slow roasting. At one time it was thought that rapid roasting gave better results. Four batches of roast an hour were considered sufficient. Machines that could roast in 6 to 10 minutes at a temperature of 180°C were popular. It was claimed that quick roasting helped to develop and retain the aroma. But experiments failed to confirm this theory. It is seen that other conditions being equal, about 20 minutes time is required to get the correct roast and the best temperature for fully developing the fragrant aromatic substance appears to be between 200° to 280°C.

(2) BLENDING.

Blending on a large scale is practised in the United States. 60 per cent Colombian Medellins and 40 per cent of the top grade Santos is said to form the basis of the best blends. Cheaper blends are composed of 50 per cent *robusta* and 50 per cent Colombian inferior grades. In the United Kingdom the better blends contain either Costa Rica and Indian or Costa Rica and East Africa or Jamaica and Indian and Costa Rica. For cut-price coffees inferior Kenya and Brazil are used. For making coffee extracts, Costa Rica is mostly used as it is believed that a higher percentage of extract can be obtained from Costa Rica, than from any other coffee. While some of the leading manufacturers put out "straight" or unblended coffee in the market, the majority believe in judicious blending of different types. The best qualities of the top grades of Blue Mountain Jamaica, Mysore and Kenya and Mocha have an established reputation. Some of the manufacturers consider that equal parts of Mysore and Naduvattam with Costa Rica make an excellent blend.

In Canada the best brands of tinned coffee contain a blend of fine Santos, Costa Rica or Mocha in spite of the heavier prices that have to be paid for them. Indian coffee should therefore find a place on this market.

Brazilian coffees form the basis of most of the blends in France. The better and more high priced blends consist of Mysore, Costa Rica and Colombian.

The following blends of "Pure" coffee are considered to be popular in Central Europe:—

(J) 50 per cent Central American.

25	„	Costa Rica,
10	„	Indian,
15	„	Brazilian.

- (II) 60 per cent Central American,
 30 ,, Brazilian,
 10 ,, Costa Rica.
 (III) 50 ,, Central American,
 50 .. Brazilian.
 (IV) 100 ,, Brazilian or *robusta*.

The more common blends in Sweden contain mostly Santos with a sprinkling of Central American, Colombian and Javas. Brazilian forms the basis of most of the blends in the Baltic countries.

It is estimated that in the United Kingdom for every 5 pounds of coffee 1 pound of chicory is used. Some of the mixtures are said to contain as much as 40 per cent chicory. The proportion of chicory in liquid extracts is very high. They contain about 75 per cent chicory while in ground coffee the average is said to be about 25 per cent chicory. Imports of chicory into England have of late decreased considerably but a good quantity of locally grown chicory is now used. However, there is a gradual decline in the consumption of chicory and an increasing demand for "Pure" coffee. If the retailers would reduce the margin that they now enjoy, a fair amount of the present mixtures could be replaced with blends of "Pure" coffee at existing price levels. In the Continental countries admixture with chicory is very common. France takes in about 64,000 cwt. of chicory against 3,700,000 cwt. of coffee. About 10,000 cwt. of chicory are consumed in Yugoslavia, the bulk of which is produced in the country as against 120,000 cwt. of coffee. Roasted barley is also sometimes used as a coffee substitute *e.g.*, in Germany and Poland. The imports of chicory into Portugal are negligible. In Central Europe the blends contain an average of 30 per cent chicory and Switzerland imports a considerable quantity of chicory. Large quantities of sugar essences, gram, nuts, acorns and roasted figs are also used as adulterants. Greece and Sweden do not import any chicory. The consumption of chicory in the United States of America is about 100,000 cwt. every year as against 14,566,000 cwt. of coffee so that the consumption of chicory is apparently very small, being only about 0.8 per cent of coffee.

D.—Adulteration legislation in India.

The terms of the Food Adulterations Acts in the different provinces and States are very variable. They apply only to certain areas and their administration leaves much to be desired. If the response to a "drink more coffee campaign" is to be effective it would be desirable to prevent by legislation the sale as coffee of products which are not coffee. Some of the provinces and States have already enacted legislation to meet the situation but they would have to be further amplified and improved. The present legislation does not touch adulteration of coffee in the cup. All the coffee hotels and restaurants in South India and those hotels and restaurants which cater to South Indians in North India buy the beans and do the roasting and grinding themselves. They usually add adulterants at the time of grinding. The law regarding adulteration should take cognisance of this. In the United Kingdom if one orders a cup of coffee and receives a cup prepared from a mixture of coffee and chicory the restaurant or hotel has committed a legal offence and is liable to prosecution for having sold an adulterated article.

Appendix XLVI gives the details of legislation relating to the adulteration of coffee in the different provinces and States. Madras, Punjab, Central

Provinces and Berar, Sind, Assam, Ajmer-Merwara in British India and Mysore, Travancore, Cochin and Pudukkottai States have enacted new rules regarding adulteration of coffee. The question is understood to be engaging the attention of the Governments of Bombay, Sind and Baroda. Bihar and North-West Frontier Province and the Government of Jammu and Kashmir felt that as coffee is not a common article of commerce, there is no necessity for any such legislation. The Governments of Bengal and the United Provinces of Agra and Oudh are understood to be awaiting the further results of analysis. Other provinces and States have not taken any action mainly because coffee is not a beverage that is commonly used in their respective areas.

Some of the features of the legislation in the more important provinces and States are reviewed below :

Madras Presidency.—In September 1938 the Government of Madras amended the rules under section 20 of the Madras Prevention of Adulteration Act, 1918, for dealing with adulteration of coffee. The rules prohibit the adulteration of coffee with any product other than chicory. The sale of coffee by weight was also brought within the legislation. Any mixture of chicory exceeding 50 per cent is not to be called “coffee blended with chicory”, but “chicory blended with coffee”. The definition of coffee as found in the legislation of the United States of America was adopted.

Punjab.—The Punjab Government amended the rules in February 1938 and defined coffee as in Madras but did not go any further. The provision for the declaration on the labels, the proportion of chicory permissible in any admixture and provision regarding other adulterants were not made.

Central Provinces and Berar.—The Government of Central Provinces and Berar introduced legislation in August 1937 for defining coffee on the same lines as in Madras and the Punjab. Admixture of any foreign substance in coffee sold as pure was prohibited and the chemical contents of pure coffee were also prescribed.

Assam.—Assam amended the rules in May 1938 to provide that the proportion of chicory should not exceed 50 per cent and the container should have a label showing the exact proportion of chicory.

Sind.—The Government of Sind extended the provisions of the Bombay Prevention of Adulteration Act, 1925, to certain specified municipalities.

Ajmer-Merwara.—Ajmer-Merwara in addition to defining coffee under the Punjab Pure Food Act, 1929, also prescribed the moisture, ash, caffeine and fat contents of pure coffee in September 1937.

Mysore State.—In March 1938 the Government, besides defining coffee under section 20 of the Mysore Prevention of Adulteration Act, provided that only chicory would be regarded as a permissible adulterant and the proportion of chicory should not exceed 50 per cent. The exact proportion should be stated on the label. It was also provided that receptacles containing ground coffee in loose form should be labelled showing the nature and content of adulterants present.

Travancore State.—Travancore amended the law on the same lines as Mysore State in December 1938.

Cochin State.—Besides defining coffee the rules introduced in June 1937 prescribed the chemical contents of “pure” coffee. The rules also recognised the term “French” coffee or tablet coffee for mixtures of coffee with chicory.

Pudukkottai.—In September 1937 rules defining coffee were framed. The proportion of chicory in any admixture has to be stated on the label.

E.—Adulteration laws in foreign countries.

United States of America.—The United States Food and Drug Adulteration Act defines coffee as the seed of cultivated varieties of *Coffea arabica*, *C. liberica* and *C. robusta*. Green coffee, raw coffee and unroasted coffee is coffee freed from all but a small portion of its spermoderm and conforms in variety and in place of production to the name it bears. Roasted coffee is properly cleaned green coffee which by the action of heat has become brown and has developed its characteristic aroma. The following are the provisions of the Food and Drugs Act, 1928, in the United States of America. Section 1 of the Act prohibits the mixing, colouring and powdering of any article of food with any material or ingredient so as to render the article injurious to health. Section 2 makes it an offence to sell to the prejudice of the purchaser any article of food which is not of the nature of a substance or quality of the article demanded. Section 3 makes it an offence for any person to use wilfully a label falsely describing an article of food sold by him. So the labels on coffee mixture have to state the adulterants used. Regarding colouring, the importation of green coffee coated with lead chromate, prussian blue and other substances is prohibited. All substances used for glazing or colouring must be mentioned on the label. The Pure Food Law of 1906 made it compulsory that the label on package coffees should state either the actual coffee used in the blend or a brand name together with the general description of coffee and the net weight of the contents of the package. When chicory or other admixture is used it should be declared on the label below the brand name and the words should be given equal prominence. The name of the component that predominates should be stated first. In addition to the Federal Law, some of the States have enacted their own laws. In Pennsylvania and Maryland, the amount of chicory is not to exceed 15 per cent of the total and the package should bear the words "Coffee, chicory" in letters of the same size and not less than $\frac{1}{2}$ an inch in height. Restaurants selling such mixture, should display a placard bearing the words "The coffee sold here is mixed with chicory". The sale of cereals and coffee mixture is prohibited in the above States.

The Federal Law provided that in case one of the articles in the blend is mentioned on the label, the other items in the blend must also be mentioned in the order of their importance.

Colombia.—Law No. 76 issued on 6th June 1931 contains the following provisions :—

- (1) Products sold within the country and described as coffee must show on the bags the percentages of coffee and of other products included respectively.
- (2) The sale under the name of coffee products containing less than 90 per cent of coffee is prohibited.

United Kingdom.—The English law regarding coffee adulteration does not appear to be satisfactory. It only provides that the name of the adulterant mixed with coffee should be declared on the container and also that no substance would be sold as coffee when it is a mixture of coffee and something else. It is not necessary to state the proportion of chicory and other adulterants. The British Ministry of Health have been approached for modifying the law. According to the present law it is apparently within the law to sell as "French coffee containing a mixture of chicory", a mixture containing 99.9 per cent of chicory and only a trace of coffee. Regarding colouring, the adulteration

act prohibits the alteration of natural tint of any food by the application of starch to the exterior.

The regulation in other parts of the Empire are more definite. In Canada, only pure coffee can be sold as coffee. If any adulterants are used their names should be stated on the label and if the mixture is sold as a "coffee mixture" the coffee proportion must be at least 51 per cent. In the Union of South Africa the label must contain the names of the adulterants and their proportion. In the case of mixtures there should be a minimum of 75 per cent coffee and in the case of liquid extracts 50 per cent.

Europe.—While the law regarding adulteration of coffee is stiff in some countries, it is extremely loose in others.

France.—The following regulations are in force in France.

It is prohibited to hold in stock, sell or re-sell under the name of coffee with or without substitute or under a denomination which includes the words coffee, or a word derived from the same, any products other than the grain of coffee plant not having been subjected to any treatment other than roasting. It is prohibited to stock, sell or re-sell under the name of chicory with or without substitute any product other than the root of the chicory plant properly cleaned, roasted and ground. The mixing of different species of coffee or coffee from different areas is prohibited. Coffee containing adulterants should have the name and the proportion of admixtures stated on the container provided it does not exceed 2 per cent of the total. The sale of coffee containing more than 5 per cent moisture is prohibited, but this prohibition does not apply to coffee packed in tins, for 95 per cent of the net weight of a tin should contain dry coffee, otherwise it should be stated on the container. The mixture of coffee meant for the preparation of coffee beverage should have a label showing the nature of the composition of the mixture. Regarding colouring the law is explicit—artificial colouring of green coffee is prohibited.

Other countries.—In Yugoslavia the adulteration law regarding coffee is as under :—

It is prohibited to sell adulterated or falsified coffee, coffee beans under names indicating its origin, coffee substitute under the name of coffee and to adulterate roasted coffee with substitutes and to place it in circulation as coffee. Falsified or adulterated coffee is confiscated and destroyed. On the question of colouring it is prohibited to sell raw coffee beans coloured with any kind of colouring matter. In Greece police regulations provide heavy penalties for adulteration of coffee. In Central Europe, the Baltic and Scandinavian countries, however, there is no adulteration legislation having special reference to coffee.

F.—Containers.

(1) METHODS OF PACKING.

(a) *Roasted beans*.—Oxidisation which brings about staleness and rancidity is not so quick in the case of roasted beans as in the case of ground coffee. But staleness sets in in about 10 days time. It is therefore necessary to pack roasted beans in the same manner as ground coffee. Roasted beans are generally packed in airtight tins. Two manufacturers use CO₂ packing for roasted beans as well. The tins are usually packed in wooden cases.

(b) *Freshly ground coffee*.—Freshly ground coffee is packed by retailers in small paper bags costing about Re. 0-0-1 per bag. Some use tissue paper and others ordinary glazed brown paper.

(c) *Ground coffee*.—The methods of packing ground coffee and tablets are of fundamental importance to the coffee industry. The manufacturers are trying to make the prepared packet as attractive as possible. The pleasing aroma of fresh coffee is the biggest single factor that accounts for the success of coffee as a beverage. The sale of "stale" and "rancid" coffee is the surest way of stifling the coffee trade. Samples of manufactured coffee drawn from different parts of India showed that more than three-fifths of them were packed in ordinary tins which were not vacuumised. Only about 28 per cent were found to be packed in vacuum tins. A good number of the smaller manufacturers packed their coffee in paper packets. Others packed in second-hand tins. Only three manufacturers adopted the inert gas process or CO₂ packing and they are the best sellers. Only two manufacturers made their own tins.

The tins are usually packed in wooden cases of varying sizes. Flattened cans with the ends lined with a special compound are purchased by some manufacturers. The coffee manufacturer makes the open tins by inserting the plate between two rollers and rotating it. On a flanging machine both ends of the can are turned outward. One end of the can is then seamed by being rolled against the flange.

(i) *Vacuum process*.—After filling coffee and seaming the cans a small hole is pierced on the top and the tray containing the cans is placed in a vacuum chest. A vacuum pump extracts the air from the chest and also from the cans through the hole. The hole is soldered after this process by means of an electric iron rod operated through an air-tight sliding ball joint in the head of the chest.

(ii) *Inert gas treatment*.—This method (see plate facing page 242) of packing is approved by the British Admiralty and is considered the best for preserving coffee from oxidation. The tins are first vacuumised in a gas charging box through a valve which is later opened to a gas expansion tank fed at 5 lb. pressure through a reduction valve from cylinders containing CO₂ in liquid form. The vacuum in the charging box is replaced by this gas and it impregnates the coffee cells. The holes are then soldered. The cost, presuming that CO₂ is easily obtainable, is estimated at about 2½ annas for charging 100 lb.

The oils and fats forming about 13 to 15 per cent of the contents of coffee give the characteristic flavour to coffee and they deteriorate rapidly on contact with oxygen. The measure of ability to keep the flavour of coffee is the exact measure of the success of packing. Judged from the above standard, CO₂ is considered to be the best for preserving the flavour for the longest possible period.

(2) SIZE AND COST OF CONTAINERS.

(a) *India*.—The wide variations in size of tins and cases for packing ground coffee are indicated below :—

Number of tins in one case.	lb.
192 tins × 1/8 lb.	24
144 tins × 1/4 lb.	36
120 tins × 1/4 lb.	50
96 tins × 1/2 lb.	48
48 tins × 1 lb.	48
36 tins × 1 lb.	36
24 tins × 2 lb.	48

Number of tins in one case.	lb.
12 tins $\times$ 1 lb.	12
12 tins $\times$ 5 lb.	60
8 tins $\times$ 7 lb.	56
7 tins $\times$ 5 lb.	35
6 tins $\times$ 5 lb.	30
4 tins $\times$ 14 lb.	56
4 tins $\times$ 7 lb.	28
2 tins $\times$ 40 lb.	80
2 tins $\times$ 20 lb.	40
2 tins $\times$ 18 lb.	36
2 tins $\times$ 14 lb.	28
1 tin $\times$ 28 lb.	28

1 lb. tins are the most popular packing.

The weight of the packing material varies from 25·8 to 47·8 per cent of the total weight for ground coffee and 24·5 to 29·2 per cent for tablets. The most popular packages are 36 $\times$ 1 lb. and 48 $\times$ 1 lb. tins. The average weight of the empty packages is about 40 per cent of the total. For packing 36 lb. of coffee about 33 lb. of packing material is used which is more than nine-tenths of the weight of coffee. Any reductions in the weight of empties would be a great saving in railway freight for the manufacturers. In 1938 the cost of tin-plate with solid centre scored ring and lower lid type supplied in flattened form was about Rs. 155 per thousand for 1 lb. tins which amounted to about Re. 0·2-6 per tin. The smaller manufacturers use cheaper tin material. The tins are usually packed in wooden cases. The cost of wooden cases varies from 5 to 12 annas per case depending on the size of the case. The cost of labels is estimated at 3 pies per label. The following figures show the estimated manufacturing and distributing costs of 12 lb. of "pure" tinned coffee packed and sold in wooden cases.

Price spread on 12 lb. of manufactured coffee in tins.

	Rs.	A.	P.	Per cent
(1) Raw coffee—14 lb. at As. 5 a lb.	4	6	0	29·2
(2) Cost of roasting, mixing and grinding	0	2	0	0·8
(3) Cost of tins	1	11	0	11·3
(4) Cost of labels	0	3	0	1·3
(5) Cost of packing (CO ₂)	0	0	4	0·1
(6) Cost of wooden case	0	6	0	2·5
(7) Handling and sundry charges	0	8	0	3·3
(8) Manufacturer's distribution cost and margin including freight and loss in weight	6	3	8	41·5
Manufacturer's selling price	13	8	0	90·0
Retailer's margin	1	8	0	10·0
Retailer's price to consumer	15	0	0	100

NOTE.—For preparing 12 lb. of coffee about 14 lb. have to be used inasmuch as there is a loss of about 18 per cent in roasting.

(b) *Abroad*.—Packing methods have advanced very greatly in the United States of America as a result of research. There are about 1,200 packers of manufactured coffee in America. Coffee trade has realised that the freshness of coffee as received by the consumer is as vitally important as composition of the blend. It is estimated that 90 per cent of the coffee sold by wholesalers to the retail trade is in vacuum containers. Paper bags, cardboard cartons, fibre or cardboard containers with tin tops and bottom, glass jars (vacuum and non-vacuum), and vacuum tins are used for packing ground and roasted coffee. Vacuum tins are the most popular. Paper bags are widely used by retailers for selling ground coffee. They are usually lined with glassine foil.

Coffee containers' test of 15 different types of packages made in United States of America showed that coffee in vacuum packed cans fared much better than other kinds of packages.

G.—Prices of manufactured coffee.

The sharp fall in the price of raw beans is not reflected in the wholesale price of roasted beans and manufactured coffee. Freshly ground coffee is not sold on any wholesale basis as by the very nature of the commodity it cannot be sold in wholesale. The retail prices of freshly ground coffee in the producing centres react to the price of raw beans more than retail prices in Northern India. If the prices of freshly ground coffee in producing centres are in-elastic, the consumers, who are accustomed to roasting and grinding coffee on their own, will be induced to buy raw beans and short-circuit the seller of freshly ground coffee. There is considerable difference in quality between the various brands of ground coffee in packages and price to a great extent depends on the quality of the coffee. The wholesale price of "pure" coffee in 1 lb. tins ranges from Rs. 1-2-0 per lb. to Rs. 2-0-0 per lb. and that of "French" coffee from 2 annas a lb. to Rs. 1-2-0 per lb.

(1) ROASTED BEANS.

The trade in roasted beans is small. The fall in the price of roasted beans is less than in the case of freshly ground coffee. In 1932 "Extra bold" roasted beans were quoted at about Re. 1-0-0 per lb. It dropped to about Re. 0-12-0 in 1939.

The price per lb. of the roasted beans depends also on the size of the package. The following illustrates the point :—

Size of cases.	Price per lb.		
	(Flats)		
	Rs.	A.	P.
2 × 28 lb.	0	10	0
4 × 14 lb.	0	10	3
8 × 7 lb.	0	10	6
16 × 5 lb.	0	10	9
16 × 3 lb.	0	11	0

The difference in price per lb. between the smallest and the largest package is an anna per lb. The larger the size of the package the lower the price per lb. The prices are usually quoted delivered f.o.r. consignee's station.

For the same quality different prices are often quoted by manufacturers to dealers. Dealers who bargain, obviously get better terms than those who do not. An example of varying prices quoted by a distributor for the same product to different dealers during the same period in the same town is given below :—

Period.	Dealer.		
	A.	B.	C.
	Rs. A. P.	Rs. A. P.	Rs. A. P.
I	0 12 0	0 13 0	1 0 0
II	0 13 0	0 12 0	1 0 0
III	0 13 0	0 11 0	1 0 0

The dealers do not keep themselves informed about the current prices either of the raw or manufactured product and are not therefore in a position to bring their prices into line. This results in an excessive retail margin.

(2) FRESHLY GROUND COFFEE.

The retail price of freshly ground coffee fluctuated as under in Madras :—

	(Per lb.)
	Rs. A. P.
1931	1 2 0
1932	0 15 0
1933	0 14 0
1934	0 13 0
1935	0 12 6
1936	0 11 0
1937	0 11 6
1938	0 10 6
1939	0 10 0

In the course of 8 years, prices went down by about 8 annas per lb. A gradual fall in prices with a small rise in 1937 is apparent. The rise in price in 1937 was due to the slight spurt in prices of raw beans in 1936-37.

The retail price of freshly ground coffee in South Indian producing areas appears to follow the course of raw beans more intimately than any of the other manufactured coffees. However, in the non-producing centres the price of freshly ground coffee has remained fairly steady during the same period. In 1932, freshly ground coffee was sold in Delhi at Rs. 1-8-0 per lb. and till 1939 the price remained at Rs. 1-8-0. When the Indian Coffee House started selling at Re. 1-0-0 per pound the same retailers reduced their price to Rs. 1-4-0 and others to Re. 1 per lb. This is fairly typical of Northern India centres. The class of consumers who take freshly ground coffee in Northern India have no idea of roasting and grinding coffee and therefore would not go in for raw beans. The retailers are in a position to exploit this situation and keep the retail prices unwarrantably high but as already shown the retailers are themselves badly placed for buying their requirements at

competitive market rates. The retail price in some of the cities in Northern India for freshly ground coffee during the last 5 years is as under :—

	(Per lb.)
Lahore	Rs. 1-4-0 to 1-8-0
Peshawar	„ 1-4-0 to 1-8-0
Rawalpindi	„ 1-4-0
Allahabad	„ 1-8-0
Lucknow	„ 1-4-0
Calcutta	„ 1-0-0 to 1-8-0
Delhi	„ 1-4-0 to 1-8-0

The variations in price from month to month in the producing centres are small. The following were the retail prices of one of the best sellers of freshly ground coffee in 1937 :—

	(Per lb.)
	Rs. A. P.
January	0 10 6
February	0 11 0
March	0 12 0
April	0 12 0
May	0 12 0
June	0 12 0
July	0 12 0
August	0 12 6
September	0 12 6
October	0 12 6
November	0 12 3
December	0 11 0

(3) "PURE" AND "FRENCH" COFFEE.

(a) "*Pure*" coffee.—The quality of "pure" coffee put on the market varies from manufacturer to manufacturer. While one may prepare his "pure" coffee from the top grades, others make it out of "B" and "C" or "*Triage*" or *robusta*. The price for "pure" coffee in 1 lb. packages therefore varies from Re. 1-0-0 to Rs. 2-0-0 per lb. The following shows the difference in wholesale price between the various manufacturers :—

	Price per lb.
	Rs. A. P.
Manufacturer A	1 0 0
Manufacturer B	0 12 0
Manufacturer C	1 2 0
Manufacturer D	1 4 0
Manufacturer E	2 0 0

The difference in price is not merely due to the difference in quality. The reputation built up by certain manufacturers and the popularity of certain blends have also enabled some to market their coffee at better prices than those of their competitors, who may be manufacturing their product out of higher priced coffee. The buyer, however, has no means of assuring himself

on the point in the absence of standard methods of grading and marking ground coffee.

Manufactured coffee is marketed on the basis of f.o.r. destination station and the wholesale price is ostensibly the same throughout the country. Some manufacturers have taken advantage of the ignorance of the buyers, especially in Northern India and quoted different rates to different buyers. For example, a particular manufacturer quoted Rs. 1-3-0 per lb. in Sind and Rs. 1-5-0 per lb. for the same coffee in Benares during the same period.

Wholesale prices have not fluctuated to any great extent. The price of one of the most popular brands of "pure" coffee came down from Rs. 1-5-0 per lb. in 1932 to Rs. 1-4-0 per lb. in 1936. This rate remained in force from 1936 to 1940. While some of the manufacturers give a discount of 2 annas per lb. others give from 1 to 5 per cent.

The price of manufactured "pure" coffee has not fluctuated in sympathy with the price of raw beans. It does not show any tendency to respond to the fall in the price of the raw product. Prices have only dropped by about 5 per cent in the course of the last 8 years, while prices of raw beans dropped by about 30 per cent.

As in the case of roasted beans the price per lb. depends on the size of packages as shown below :—

Size of package.	(Per lb.)		
	Rs.	A.	P.
$\frac{1}{2}$ lb. (cases of 48 lb. net)	1	6	0
1 lb. (cases of 48 lb. net)	1	5	0
2 lb. (cases of 48 lb. net)	1	4	0
7 lb. (cases of 112 lb. net)	1	3	0

1 lb. packages are the most popular.

The retail prices of "pure" coffee appear to vary from place to place and from dealer to dealer in a town. While the retail price of a particular brand of coffee was Rs. 1-4-0 per lb. in New Delhi, it was Rs. 1-6-0 in Old Delhi. In Lahore the same brand was sold at Rs. 1-3-0 in Anarkali and at Rs. 1-5-0 in the Mall. In Rawalpindi it was sold from Rs. 1-4-0 to Rs. 1-6-0 per lb. The retail price of any particular brand was also found to be different in different towns in the United Provinces during the same period. In Lucknow it was Rs. 1-7-0 per lb., in Cawnpore Rs. 1-6-0 and in Benares Rs. 1-4-0. The difference in retail prices between shops in the same town is based on the habits of the people visiting such shops. The ordinary consumer visiting provision dealers in the heart of the town believes in bargaining to the last pie. This naturally stimulates competition among the dealers. The higher class of consumers who buy from bigger shops believe that price denotes quality and buy without bargaining. The overhead charges are also higher in the case of the bigger dealers. The price differences are, therefore, a measure of the higher cost of distribution.

(b) "*French*" coffee.—The price of "French" coffee depends mainly on the quantity of the admixture. The wholesale price of "French" coffee varies from 2 annas to Rs. 1-2-0 per lb. Prices remained fairly stable in the case of "French" coffee during the last 8 years. The price for one of the best sellers dropped only from Rs. 1-2-0 per lb. in 1933 to Re. 1-0-0 per lb. in 1937. The price remained at Re. 1-0-0 per lb. till 1940.

As in the case of "pure" coffee, the wholesale price quoted by manufacturers is different according to the bargaining capacity and financial status of the buyer. Different rates are quoted for the same brand to dealers in the same place, and the discounts offered by the same manufacturer also vary from place to place. The following are the wholesale prices of a few brands of "French" coffee :—

[illegible]

They have remained much the same in the course of the last 4 years.

The retail price of "French" coffee even for a particular brand varies from place to place as under :—

										(Per lb.)		
										Rs. A. P.		
Lahore	.	.	.	.	.	.	.	.	.	1	2	0
Peshawar	.	.	.	.	.	.	.	.	.	1	4	0
Rawalpindi	.	.	.	.	.	.	.	.	.	1	3	0
Allahabad	.	.	.	.	.	.	.	.	.	1	2	0
Jaipur	.	.	.	.	.	.	.	.	.	1	4	0
Lucknow	.	.	.	.	.	.	.	.	.	1	2	6
Calcutta	.	.	.	.	.	.	.	.	.	1	2	0

The price varies from Rs. 1-1-0 to Rs. 1-4-0 per lb. between dealers in Lahore, Rs. 1-2-0 to Rs. 1-4-0 in Rawalpindi and Rs. 1-2-0 to Rs. 1-4-0 in Lucknow depending on the prominence of the locality in the town in which it is sold.

(4) TABLET COFFEE.

The wholesale price of tablet coffee also varied from Re. 0-4-0 per packet of 120 tablets to Re. 1-0-0. Tablet coffees are usually heavily adulterated. The price varies from manufacturer to manufacturer depending on the quality of the tablets. While one manufacturer charged Re. 0-4-0 per tin of 90 tablets another charged Re. 0-6-0 per tin of 40 tablets and Re. 0-8-0 per tin of 48 tablets. Some gave discounts on a graduated scale. The size of the packages also differed from manufacturer to manufacturer as under :—

48 tins $\times$ 30 tablets per case.

20 „ × 40 „ „ „

28 „ × 48 „ „ „

24 „ **×** **60** „ „ „

40 „ × 90 „ „ „

12 „ × 120 „ „ „

10 „ × 120 „ „ „

28 „ $\times 180$ „ „ „

10 „ × 360 „ „ „

The retail price of tablets is usually 3 pies per tablet over the whole country.

(5) FOREIGN COFFEE.

(a) *Tinned coffee*.—The price of imported tinned coffee has steadily fallen. The wholesale price of a leading imported brand in the ports dropped from Rs. 18-0-0 per dozen 1 lb. tins in 1933 to Rs. 13-0-0 in 1936. The following figures show the fall :—

	Rs. A. P.									
1933	18	0	0							
1934	16	0	0							
1935	15	0	2							
1936	13	0	0							
1937	14	0	0							
1938	12	13	0							
1939	13	0	0							(Up to September).

It rose slightly in 1937 in sympathy with world prices of raw beans but again dropped.

The retail price varies from Rs. 1-4-0 per lb. to Rs. 1-12-0 per lb. In Karachi, Bombay and Calcutta it ranges from Rs. 1-4-0 to Rs. 1-6-0 per lb. while in Lahore, Delhi, Lucknow and other cities it ranges from Rs. 1-6-0 to Rs. 1-12-0 per lb. The retail price in some of the important centres in 1938 was as under :—

	(Per lb.)									
	Rs. A. P.									
Calcutta	1	6	0							
Lahore	1	10	0							
Nagpur	1	12	0							
Peshawar	1	12	0							
Cawnpore	1	8	0							
Rawalpindi	1	7	0							
Naini Tal	1	8	0							
Bombay	1	6	0							
Karachi	1	6	0							

It may be noted that these prices are higher than for the corresponding "pure" ground coffees of Indian manufacture. And yet the product has a ready sale owing to its quality as represented in its method of grading and packing. Indian manufacturers might be expected to give this point some attention.

(b) *Coffee essences*.—The wholesale price of coffee essences before the War (September 1939) was about Rs. 48-0-0 for a case of 48 bottles (big) and Rs. 26-0-0 for a case of 48 bottles (small). The retail price ranged from Rs. 1-3-0 to Rs. 1-6-0 per large bottle and Re. 0-11-0 to Re. 0-13-0 for the small bottle.

H.—Distribution.

(1) WHOLESALE TRADE.

The wholesale distribution of coffee products is done by one of the following methods :—

- (a) Manufacturers' distributing depots.
- (b) Distribution through agents.
- (c) Distribution through travelling salesmen.
- (d) Direct sale to retailers.

(a) *Manufacturers' distributing depots.*—Some of the bigger manufacturers have distributing depots in important towns. These depots usually supply goods to their respective agents or to wholesale and retail distributors in the area under their jurisdiction. For example, a depot in Delhi distributes coffee in the whole of the Punjab, Rajputana up to Jodhpur and in a portion of the United Provinces up to Etawah and Naini Tal. Sufficient stocks are kept in all the depots. Retailers can indent directly from the manufacturers' depots. Some of the manufacturers allow wholesale rates up to a minimum quantity of 3 lb. Discount ranging from 1 to 2 annas a lb. or 1 to 5 per cent is allowed to all dealers.

(b) *Distribution through agents.*—One leading manufacturer distributes coffee through representatives who are allocated certain definite areas. Deposits are taken from these agents depending on the volume of business. Interest on the deposit is given by the manufacturer. Stocks are given against cash, the railway receipt being sent through a bank. The agents work on a discount of about 5 per cent. Some of the agents are allowed consignment terms i.e., agents have only to pay for stocks which are actually sold by them, the balance being kept on manufacturers' account by the agent. The local agents sell to wholesale as well as retail distributors at stipulated prices. They usually allow credit from 30 to 90 days to the merchants who deal with them.

The agents working on consignment basis are protected from price fluctuation as credit is given or debit taken for any fall or rise in prices on the actual stock. Sale statements are submitted weekly to the principals and money is remitted through a bank. The agent in turn extends this concession to dealers by sending round his man for ascertaining the stocks with them. Credit notes are given on unsold stocks which are passed on to the principals who reimburse the agents. If there is a rise in price, the dealers are allowed the margin. This ensures a sufficient stock being kept by dealers.

(c) *Sales through travelling salesmen.*—Some of the manufacturers effect sales through travelling salesmen who go round the areas allotted to them once in a month or two. These salesmen are full time paid employees of the manufacturer and are also given a commission for stimulating sales. They visit individual dealers, examine the stock position, and book orders. The railway receipt is either sent by V. P. P. or through a bank. Some of the manufacturers allow the long-standing customers a month's credit.

(d) *Direct sales to retailers.*—The smaller manufacturers directly deal with retailers. The retailers are given discount ranging from 1 to 10 per cent.

(2) TERMS OF DELIVERY.

The terms of delivery are much the same in the case of all manufacturers. Prices are quoted f.o.r. destination and the railway receipt is usually sent through a bank or V. P. P.

(3) RETAIL TRADE.

The dealers who retail coffee products are mainly provision merchants. There are a few specialised merchants in coffee in the Madras Presidency and Mysore State who sell only coffee. They do not usually sell coffee in packages but only freshly ground coffee and raw beans. Freshly ground coffee is sold in small paper bags with the name of the dealer printed on the bags. About $\frac{1}{4}$ to 1 lb. at a time is the usual quantity sold. Well-known brands of ground coffee are sold mostly in 1 lb. tins. The grocers usually stock from two to three cases of 1 lb. tins.

I.—Burma.

(1) MANUFACTURE OF COFFEE PRODUCTS.

(a) *Roasted beans.*—The sale of roasted beans is limited. They are usually imported from India and purchased by a few big hotels. Some are used by grocers for preparing freshly ground coffee.

(b) *Freshly ground coffee.*—There are about 60 or 70 retailers who sell ground coffee in loose packages. Inferior coffee is generally purchased for turning out coffee powder. Gram and chicory are largely used for adulterating coffee. Ground coffee is kept in tins and sold to consumers at rates ranging from Re. 0-6-0 to Re. 1-0-0 per lb. It is reported that freshly ground coffee in loose packages is getting unpopular on account of the very poor type of coffee sold. The trade in good quality tinned coffee should therefore expand.

(c) *“Pure” and “French” coffee.*—A few big manufacturers have special roasters for roasting the beans. The raw beans are first of all dried for about two or three hours. After drying, the beans are stored in gunny bags holding about 170 lb. each. Coffee is used for manufacturing only after about 6 months. The beans are weighed in lots of 84 lb. and put in kerosene tins and taken to the roaster. They are roasted by means of hot air for about twenty minutes. After roasting the beans are cooled on a revolving tray attached to the roaster. Broken pieces of parchment and dust are drawn into a pipe under the tray by suction. After cooling on this revolving tray for about 15 minutes the roasted beans are spread out on bamboo trays for about another 30 minutes before grinding. Some of the manufacturers blend coffee of different types while others sell “pure” coffee. The following are some of the blends put on the market:—

Manufacturer.	Proportion of different varieties of coffee. (Per cent)				
	Nilgiri.	Shevaroy.	Mysore.	Toungoo.	Aungban.
1	25	25	25	25	..
2	100	..	..	..	..
3	50	..	..	..	50
4	..	..	..	100	..
5	..	..	..	..	100

The different types of beans are roasted separately and then mixed in the above proportion.

Grinding by the bigger manufacturers is usually done in electric grinders of 20 to 50 lb. capacity. Medium to fine grind appears to be the more popular taste. Roasting and grinding costs about 1 anna a lb. After grinding, the powder is packed in tins. The tins are made locally. The cost is said to be about Re. 0-1-9 for a 1 lb. tin. A case containing 112 tin sheets costs Rs. 14-4-0. About 240 tins are turned out of 112 sheets. The bigger manufacturers pack in vacuum tins. There are about five big manufacturers whose turnover is between 2,000 to 6,000 lb. a month. While one of the big manufacturers mixes about 50 per cent chicory, the others add from 5 to 10 per cent. Only one or two manufacturers sell "pure" coffee.

The smaller manufacturers usually mix large quantities of chicory and use inferior coffee. The roasting is done in drum or iron pans and grinding in electric roasters. The tins are not packed under vacuum.

(d) *Adulteration.*—Gram and chicory are the major adulterants. About 1,000 cwt. of gram and 150 cwt. of chicory are used every year for this purpose. The practice of adulterating coffee powder appears to be increasing. The better class of manufactured coffee contains only 2 to 5 per cent chicory while the blends of the smaller manufacturers contain about 70 per cent gram and chicory.

(2) PRICE OF MANUFACTURED COFFEE.

(a) *"Pure" coffee.*—The wholesale price of manufactured coffee has remained more steady than that of raw beans. The following shows the position :—

—	(Per dozen 1 lb. tins.)						Foreign.
	Local.		Imported (Indian).				
	A.	B.	A.	B.	C.		
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.		
1932-33 . . .	17 2 0	17 8 0	14 4 0	15 0 0	16 4 0	17 0 0	
1933-34 . . .	17 2 0	16 8 0	13 8 0	13 8 0	14 6 0	13 4 0	
1934-35 . . .	17 2 0	16 0 0	13 8 0	13 8 0	14 6 0	13 4 0	
1935-36 . . .	16 8 0	15 0 0	13 8 0	13 8 0	14 6 0	13 4 0	
1936-37 . . .	15 0 0	15 0 0	13 8 0	13 8 0	14 6 0	13 4 0	
1937-38 . . .	15 0 0	14 8 0	13 8 0	13 8 0	14 6 0	13 4 0	
1938-39 . . .	13 8 0	13 8 0	13 8 0	13 8 0	14 6 0	15 1 0	

While the price of imported Indian coffee remained steady from 1933-34 and rose by about Rs. 2 in 1938-39 the price of coffee manufactured locally steadily dropped.

(b) *Adulterated coffee*.—The price of adulterated coffee does not appear to have dropped as much as “pure”. The following table indicates the position :—

	(Per dozen 1 lb. tins).								
	Local.			Imported (Indian).					
				A.			B.		
	Rs. A. P.			Rs. A. P.			Rs. A. P.		
1932-33	12	12	0	13	12	0	12	12	0
1933-34	12	12	0	12	12	0	12	12	0
1934-35	12	0	0	12	12	0	12	12	0
1935-36	12	0	0	12	0	0	12	12	0
1936-37	12	0	0	12	0	0	12	12	0
1937-38	11	8	0	12	0	0	12	12	0
1938-39	11	8	0	12	0	0	12	12	0

The price of imported “French” coffee has remained the same from 1933-34, while price of local adulterated coffee fell by Rs. 1-4-0 on a dozen 1 lb. tins.

(3) DISTRIBUTION.

(a) *Manufacturers’ distributing depots*.—The manufacturers who have distributing depots in India have also their offices and depots in Burma and coffee is distributed to wholesalers and retailers on the same basis as in India.

(b) *Distribution through agents*.—One of the Indian manufacturers has an agent in Rangoon who distributes the products of this manufacturer to the trade. He gets a discount of 5 per cent on sales and has a deposit with the manufacturer, covering the price of stocks on hand with him. He usually gives about a month’s credit to the trade.

(c) *Direct sales to retailers*.—The manufacturers in Burma sell directly to the wholesale and retail trade. They usually give discounts ranging from 5 to 10 per cent and sell on f.o.r. destination basis.

Manufacture and distribution of coffee products.]

INTER-CHAPTER TEN.

Coffee undergoes essential physical and chemical changes in the process of roasting, and the liquoring quality of coffee in the cup depends considerably on correct roasting. The art of roasting, therefore, requires special skill and considerable experience.

There are many firms all over the country engaged in roasting, grinding and selling freshly ground coffee and about 75,000 cwt. of freshly ground coffee are sold every year. The consumers in the chief consuming centres like Madras, Coorg and Mysore prefer a dark roast and do a large amount of their own roasting, usually in flat iron pans. In the North, roasting is mostly done by novices in the trade and consequently the complaints of unevenly roasted beans and too light or too dark roasts are not uncommon. The trade should pay increasing attention to this aspect so as to improve the existing state of affairs.

The bigger factories use either gas or coke for roasting and most of the smaller ones use firewood and some coke. The capacity of the iron drum in which the beans are roasted ranges from 50 to 1,000 lb. The loss in weight in roasting depends mostly on the quality of the bean and the degree of roasting. Other conditions being the same, when roasted to a yellowish-brown shade coffee loses about 12 to 15 per cent in weight, to chestnut brown about 18 to 20 per cent, and to dark brown 23 to 25 per cent.

For grinding roasted beans, the consumers in the South use either mortar and pestle or small grinding machines which are turned by hand and cost from Rs. 3 to Rs. 6. Electric grinders are now getting more popular on account of their simplicity and quick service and their use is increasing in towns. The capacity of such grinders ranges from 50 to 1,000 lb. per hour.

Some of the manufacturers grind their coffee into three sizes i.e., fine, medium and coarse, and mix the powder according to certain proportion. An analysis of a number of samples of ground coffee showed however that even the leading manufacturers have not standardised the grind.

A knowledge of the characteristics of the various types and grades of coffee produced in different areas is necessary for blending. But, excepting for two or three big manufacturers, the others have no fixed standard and seldom have a standard flavour and a standard liquor as their aim in blending. The best tinned "pure" coffee is a blend of Plantation "A" and "B" but "Triage" is being used very largely by most of the manufacturers in all their blends.

The examination of samples of manufactured coffee drawn from different parts of India reveals an appalling state of affairs. Ground coffee packages costing from Re. 0-2-0 to Rs. 2 per lb. are being sold as genuine and "pure" coffee, but the coffee present in many of them is less than one-fifth of the contents. The proportion of the adulterants and the nature of the admixture is seldom mentioned on the label and in cases where it is mentioned it is placed in an obscure position. Many of the packages containing admixtures of chicory have only the caption "French" coffee.

More than 70 per cent of the adulterated packages are claimed to be "pure" coffee but the degree of admixture in such packages ranges from 0 to 68·50 per cent. The quality in the cup of the majority of the samples was, therefore, poor. On the basis of liquoring test, less than one-twentieth of the ground coffees in India were found to be of first quality and about one-fifth did not score any points at all. Most of them were found to be unfit for sale as coffee. The unrestricted sale of these admixtures is one of the biggest impediments to the expansion of the sale of coffee in India.

Chicory is the chief product used in mixtures with ground coffee. Madras imports about 7,000 cwt. of chicory and Bombay about 3,000 cwt. In Bengal, a good number of high class customers like a pinch of chicory in coffee. Some of the coffee mixtures manufactured in Bombay were found to contain as much as 98 per cent chicory. The large majority of blends contain 40 to 80 per cent chicory and the average of the samples drawn in most areas was 73 per cent.

About 6 to 8 thousand cwt. of cherry husk is exported to Aden and Persian Gulf every season. The working classes in Travancore prepare coffee out of cherry husk. In Mysore State, the sale of cherry husk to coffee powder manufacturers appeared to be on the increase. But Mysore and Coorg have now imposed a statutory prohibition on the sale and movement of cherry husk. It is hoped that cherry husk, as an adulterant, will thus lose much of its importance. If the sale of

cherry husk is completely stopped, the coffee industry should be able to dispose of about 25,000 cwt. of coffee in lieu of husk. Bengal gram, *Cassia tora* (*kuvadia*) seed from a shrub commonly found grown as weed in fields, oilseeds, burnt sugar, tamarind seed and saw dust are some of the other adulterants used.

The size and shape of coffee tablets vary with the manufacturers. Some tablet manufacturers do not add any binding material but others add about 15 per cent of glucose. About 4 to 5 thousand cwt. of coffee are used for making tablets. The tablets are usually heavily adulterated with admixtures and as they are cheap they are mostly consumed by the working classes and small coffee hotels.

The manufacture of prepared coffee is an aspect of the industry requiring greater attention from the manufacturers in India. Prepared coffees placed on the market in different forms should make a wider appeal and eventually bring in a larger number of consumers. For example, preparation of dry coffee extracts might be useful to persons in camp or on picnic.

In the ordinary retail trade in England, it is not customary to make any difference in roasting different varieties of coffee. The retailers submit coffee to a uniform temperature in roasting and consequently the results obtained on one batch may be different from another. There is considerable difference of opinion among the manufacturers in America and Europe as to whether rapid roasting gives better results or slow roasting.

While some of the leading manufacturers put out "straight" or unblended coffee in the market, the majority believe in judicious blending of different types. Blending on a large scale is practised in the United States. 60 per cent Colombian Medellins and 40 per cent of the top grade Santos is said to form the basis of the best blends. Cheaper blends are composed of 50 per cent *robusta* and 50 per cent Colombian inferior grades.

In the United Kingdom, the better blends contain either Costa Rica and Indian or Costa Rica and East African or Jamaica and Indian and Costa Rica. In Canada, the best brands of tinned coffee contain a blend of fine Santos, Costa Rica or Mocha in spite of the heavier prices that have to be paid for them. Indian coffee should, therefore, find a place on this market.

It is estimated that in the United Kingdom 1 pound of chicory is used for every 5 pounds of coffee. There is a gradual decline, however, in the consumption of chicory and an increasing demand for "pure" coffee. If the retailers would reduce the margin that they now enjoy, a fair amount of the present mixtures could be replaced with blends of "pure" coffee at existing price levels.

The terms of the Food Adulteration Acts in the different provinces and States are very variable and do not touch adulteration of coffee in the cup. In the United States of America, the Pure Food Law of 1906 made it compulsory that the label on package coffees should state either the actual coffee used in the blend or a brand name together with the general description of coffee and the net weight of the contents of the packages. When chicory or any other admixture is used it should be declared on the label below the brand name and the words should be given equal prominence. The Federal Law further provided that in case one of the articles in the blend is mentioned on the label, the other items in the blend must also be mentioned in the order of their importance. The English law regarding coffee adulteration does not appear satisfactory. It only provides that the name of the adulterant mixed with coffee should be declared on the container and also that no substance would be sold as coffee when it is a mixture of coffee and something else. The regulation in other parts of the Empire are more definite. In Canada only "pure" coffee can be sold as coffee. If any adulterants are used their names should be stated on the label and if the mixture is sold as a "Coffee mixture" the coffee proportion must be at least 51 per cent. In the Union of South Africa, the label must contain the names of the adulterants and their proportion. In the case of mixtures there should be a minimum of 75 per cent coffee and in the case of liquid extracts 50 per cent.

The methods of packing ground coffee and tablets are of fundamental importance to the coffee industry. The sale of "stale" and "rancid" coffee is the surest way of stifling the coffee trade. Samples of manufactured coffee drawn from different parts of India showed that more than three-fifths of them were packed in ordinary tins which were not vacuumised and about 28 per cent in vacuum tins. A good number of the smaller manufacturers packed their coffee in paper packets.

Oxidization which brings about staleness and rancidity is not so quick in the case of roasted beans as in the case

of ground coffee. But staleness sets in in about 10 days time. It is therefore necessary to pack roasted beans in the same manner as ground coffee.

Packing by inert gas treatment is approved by the British Admiralty and is considered the best for preserving coffee from oxidization. The oils and fats, which form about 13 to 15 per cent of the contents of coffee and give it the characteristic flavour, deteriorate rapidly on contact with oxygen. The measure of ability to keep the flavour of coffee is the exact measure of the success of packing. Packing methods have advanced very greatly in the United States of America where there are about 1,200 packers of manufactured coffee, and the coffee trade has realised that the freshness of coffee as received by the consumer is as vitally important as the composition of the blend.

The sharp fall in the price of raw beans is not reflected in the wholesale price of roasted beans and manufactured coffee. The retail prices of freshly ground coffee in producing centres react to the price of raw beans more than retail prices in Northern India. If the prices of freshly ground coffee in the South were entirely inelastic the consumers who are accustomed to roasting and grinding coffee on their own would be induced to buy raw beans and short-circuit the seller of freshly ground coffee.

Consumers in Northern India, however, who buy freshly ground coffee have no idea of roasting and grinding coffee and can not therefore go in for raw beans. The retailers are in a position to exploit this situation and keep the retail prices unwarrantably high but, as already shown, the retailers are themselves badly placed for buying their requirements at competitive market rates.

The price of manufactured "pure" coffee has not fluctuated in sympathy with the price of raw beans. Prices have only dropped by about 5 per cent in the course of the last 8 years, while prices of raw beans dropped by about 30 per cent. The price of imported tinned coffee has, however, steadily fallen. The wholesale price of a leading imported brand in the ports dropped from Rs. 18 per dozen 1 lb. tins in 1933 to Rs. 13 in 1936. The retail prices in some of the important centres in 1938 were higher than for the corresponding "pure" ground coffees of Indian manufacture. Nevertheless the product has a ready sale owing to its quality as represented in the method of grading and packing. Indian manufacturers should give this point serious consideration.

APPENDICES.

APPENDIX

Area and production of coffee in

Countries.	Area (thousand acres).											
	1909-10 to 1913-14.		1925-26 to 1929-30.		1930-31 to 1934-35.		1935-36.		1936-37.		1937-38.	
	Area.	Per cent	Area.	Per cent	Area.	Per cent	Area.	Per cent	Area.	Per cent	Area.	Per cent
<i>Empire countries.</i>												
1. India . . .	156	2.5	156	1.4	176	1.3	188	1.5	190	1.5	...	...
2. Tanganyika . .	8	0.12	109	1.0	110	0.8	112	0.9	111	0.9	...	...
3. Kenya . . .	5	0.08	83	0.7	100	0.8	104	0.8	104	0.8	...	...
4. Uganda . . .	7	0.1	25	0.2	42	0.3	40	0.4	57	0.5	...	...
<i>Foreign countries.</i>												
5. Brazil . . .	4,459	71.0	7,833	68.6	9,139	69.9	8,797	68.0	8,555	67.0	...	...
6. Colombia . . .	114	1.8	637	5.6	883	6.8	885	6.8	885	6.9	...	...
7. Haiti . . .	...	...	318	2.8	350	2.7	350	2.7	350	2.8	...	...
8. Netherlands East Indies . . .	466	7.4	300	2.6	312	2.4	298	2.3	278	2.2	...	...
9. Guatemala . .	331	5.3	223	1.9	257	2.0	267	2.1	267	2.1	...	...
10. Salvador . . .	...	...	231	2.0	247	1.9	257	2.0	259	2.0	...	...
11. Venezuela . .	...	...	247	2.2	247	1.9	247	1.9	247	1.9	...	...
12. Mexico . . .	188	3.0	217	1.9	217	1.6	242	1.9	243	1.9	...	...
13. Madagascar .	21	0.3	128	1.1	169	1.3	190	1.4	232	1.8	...	...
14. Cuba . . .	...	...	69	0.6	146	1.1	168	1.3	153	1.2	...	...
15. Costa Rica . .	71	1.1	132	1.2	120	0.9	120	0.9	120	0.9	...	...
16. Others . . .	458	7.3	712	6.2	558	4.3	655	5.1	717	5.6	...	...
Total . . .	6,284	100	11,420	100	13,073	100	12,929	100	12,768	100	...	...

I.

the principal countries of the world.

Production (thousand cwt.)											
1909-10 to 1913-14.		1925-26 to 1929-30.		1930-31 to 1934-35.		1935-36.		1936-37.		1937-38.	
Production.	Per cent	Production.	Per cent	Production.	Per cent	Production.	Per cent	Production.	Per cent	Production.	Per cent
277	1.2	284	0.7	298	0.6	368	0.9	304	0.6	335	0.7
23	0.1	154	0.4	267	0.6	243	0.6	272	0.6	272	0.6
16	0.07	184	0.5	230	0.6	387	1.0	323	0.7	329	0.7
3	0.01	38	0.09	107	0.2	229	0.6	258	0.5	(a)	...
15,649	66.6	27,325	65.9	31,103	66.4	22,359	54.7	31,042	62.2	30,439	64.4
1,354	5.7	3,619	8.7	4,191	8.9	4,956	12.1	5,256	10.5	5,267	11.1
685	2.92	663	1.6	568	1.2	711	1.7	488	1.0	494	1.0
703	3.0	2,151	5.2	2,163	4.6	2,184	5.3	2,459	4.9	2,598	5.5
949	4.0	994	2.4	873	1.9	1,315	3.2	1,319	2.6	1,122	2.4
605	2.6	1,085	2.61	1,117	2.4	1,142	2.8	1,482	3.0	1,008	2.1
1,030	4.4	1,266	3.1	1,102	2.4	1,252	3.1	1,409	2.8	1,181	2.5
679	2.9	803	1.9	761	1.6	956	2.3	921	1.9	787	1.7
37	0.1	83	0.2	302	0.6	413	1.0	551	1.1	423	0.9
96	0.4	384	0.9	535	1.1	734	1.8	616	1.2	646	1.4
276	1.2	380	0.9	443	0.9	419	1.0	522	1.1	492	1.0
1,126	4.8	2,034	4.9	2,809	6.0	3,236	7.9	2,666	5.3	1,906	4.0
23,508	100	41,447	100	46,878	100	40,904	100	49,888	100	47,329	100

(a) Not available.

APPENDIX II.
Exports of coffee from the principal exporting countries of the world.
 (Thousand cwt.)

Countries.	1909-13 (average)		1925-29 (average)		1930-34 (average)		1935		1936		1937	
	Quantity.	Per cent	Quantity.	Per cent	Quantity.	Per cent	Quantity.	Per cent	Quantity.	Per cent	Quantity.	Per cent
<i>Foreign countries.</i>												
1. Brazil	14,928	70.0	16,655	60.8	17,840	58.3	18,104	57.7	16,753	51.4	14,317	48.3
2. Colombia . . .	912	4.3	2,833	10.5	3,733	12.3	4,451	13.9	4,701	14.4	4,806	16.2
3. Netherlands East Indies.	472	2.2	1,666	6.1	1,542	5.1	1,589	5.0	1,856	5.7	1,937	6.5
4. Salvador	576	2.7	866	3.2	1,020	3.4	986	3.1	973	3.0	1,331	4.5
5. Guatemala . . .	772	3.6	1,054	3.9	877	2.9	794	2.5	1,001	3.1	927	3.1
6. Venezuela . . .	1,002	4.7	1,055	3.9	914	3.0	1,056	3.3	1,212	3.7	820	2.8
7. Mexico	437	2.1	531	1.9	618	2.0	624	2.0	843	2.6	690	2.3
8. Costa Rica . . .	253	1.2	352	1.3	440	1.5	477	1.5	420	1.3	522	1.8
9. Haiti	686	3.2	653	2.4	629	2.1	375	1.2	710	2.2	488	1.7
10. Madagascar . .	4	0.02	74	0.3	241	0.8	306	0.9	547	1.7	418	1.4
11. Nicaragua . . .	168	0.8	233	1.0	266	0.9	365	1.1	258	0.8	311	1.1
<i>Empire countries.</i>												
12. Kenya and Uganda .	19	0.08	206	0.7	347	1.1	484	1.5	638	2.0	532	1.8
13. Tanganyika . . .	31	0.1	156	0.6	238	0.8	372	1.2	243	0.7	272	0.9
14. India	248	1.2	204	0.7	203	0.7	157	0.5	268	0.8	128	0.4
15. Jamaica	74	0.4	78	0.3	75	0.2	68	0.2	93	0.3	68	0.2
16. Others	731	3.4	666	2.4	1,474	4.9	1,712	5.4	2,055	6.3	2,063	7.0
Total	21,313	100	27,382	100	30,257	100	31,920	100	32,571	100	29,630	100

APPENDIX III.
Imports of coffee into the principal importing countries of the world.
(Thousand cwt.)

Countries.	1909-13 (average).		1925-29 (average).		1930-34 (average).		1935		1936		1937		1938	
	Quantity.	Per cent	Quantity.	Per cent	Quantity.	Per cent	Quantity.	Per cent	Quantity.	Per cent	Quantity.	Per cent	Quantity.	Per cent
<i>Empire countries.</i>														
1. United Kingdom .	810	3.9	610	2.3	700	2.4	478	1.5	485	1.4	370	1.3	401	1.2
2. Canada. . .	113	0.6	225	0.85	287	1.0	307	1.0	355	1.1	386	1.2	382	1.1
3. Union of South Africa.	231	1.1	252	0.95	251	0.8	281	0.9	280	0.9	269	0.9	333	1.0
<i>Foreign countries.</i>														
4. United States .	8,105	39.2	12,722	47.4	14,248	47.9	15,715	49.9	15,371	49.7	15,229	51.9	17,689	52.2
5. France . . .	2,194	10.6	3,214	12.0	3,671	12.3	3,710	11.8	3,672	11.7	3,651	12.4	3,669	10.8
6 Germany . . .	3,569	17.3	2,368	8.8	2,841	9.6	2,905	9.2	3,057	9.8	3,500	11.9	3,896	11.5
7. Belgium . . .	995	4.3	784	2.9	973	3.3	963	3.1	1,031	3.3	1,006	3.4	995	2.9
8 Sweden . . .	663	3.2	808	3.0	890	3.0	958	3.0	919	2.9	931	3.2	1,037	3.1
9. Netherlands .	2,532	12.2	1,161	4.3	931	3.1	725	2.3	636	2.0	757	2.6	894	2.6
10. Italy . . .	520	2.5	890	3.3	821	2.8	795	2.5	626	2.0	743	2.5	748	2.2
11. Denmark . .	285	1.4	478	1.8	531	1.8	495	1.6	533	1.7	527	1.8	530	1.6
12. Others . . .	603	3.2	3,318	12.4	3,571	12.0	4,167	13.2	4,225	13.5	2,022	6.9	3,330	9.8
Total . . .	20,640	100	26,830	100	29,715	100	31,494	100	31,340	100	29,341	100	33,844	100

APPENDIX IV.

Specimen form of return from plantations issued by the Commercial Intelligence Department, India.

STATEMENT OF THE PRODUCTION OF COFFEE IN
ENDING 30TH JUNE DURING THE YEAR

Statistics for individual gardens will be treated as strictly confidential and will on no account be published separately.

-
1. District
 2. Name of plantation
 3. Total area under coffee as per previous year's statement acres
 4. Area abandoned during the year
 5. New extensions during the year (including replanting in areas abandoned in previous years) acres
 6. Total area under coffee during the year acres
(*This item is the resultant of items 3, 4, and 5, and is equal to the sum of items 12 and 13.*)
 7. Area in the occupation of planters but not under coffee cultivation acres
(*This area of land which has previously been under cultivation but in which the cultivation of coffee has been definitely abandoned should be included under this head.*)
 8. Total area of plantation acres
Persons employed (daily average)*.
 9. Garden labour (permanent) No.
(*This head should show the number living and working on the garden including the so-called "permanent labour" of Southern India.*)
 10. Outside labour (permanent) No.
(*This head should show the number working regularly in the garden but living outside it, including the "local" or "indigenous" labour of Southern India.*)
 11. Outside labour (temporary) No.
(*This head should show all labour not coming under heads 9 and 10, including "short term" workers of Southern India.*)
-

*The "daily average" number should be calculated in the following method :—

The number of persons employed for any period less than a year should be multiplied by the number of days in that period, and the total divided by 365. The result should be entered in the return as the "daily average". For example, if an estate employed 30 persons for 90 days, 40 for 60 days and 100 for 45 days—

$$30 \times 90 = 2,700$$

$$40 \times 60 = 2,400$$

$$100 \times 45 = 4,500$$

The total 9,600 divided by 300 gives 32 in round numbers, which is the figure to be entered in the return.

NOTE.—(1) If any rectifications or additional particulars are received after the return for the year has been submitted, a supplementary return for that year should be forwarded.

(2) This form has been drawn up in consultation with the United Planters' Association of Southern India which request that all planters should furnish returns.

APPENDIX IV—contd.

12. Area that has been plucked during the year . . . acres

(It is immaterial whether the area is part plucked or wholly plucked.

The area in which any plucking is carried on, however light, should be entered under this head.)

13. Area that has not been plucked during the year . . . acres

14. Quantity of coffee . . . { (a) Cherry-dried . . . bushels*
(b) Parchment . . . bushels*

The figures under this head are not intended to represent the same coffee in two stages (on the analogy of rice and paddy), but the actual quantity produced, whether it be in the form of "Cherry-dried" or "Parchment" coffee at the time of report.

*The conversion of "Cherry-dried" and "Parchment" coffee returned according to measure, into cured coffee according to weight will be made in the Commercial Intelligence Department according to fixed formulæ, namely, 140 bushels of "Cherry-dried" coffee = 1 ton cured coffee; 95 bushels of "Parchment" coffee = 1 ton cured coffee.

Date

Signature

Address

APPENDIX V.

Area under coffee in Madras, Coorg and Mysore State.

(In acres.)

Year (July to June).	Madras.	Coorg.	Mysore.	Total.
1909-10	50,892	43,421	102,659	196,972
1910-11	49,097	43,636	104,652	197,385
1911-12	51,127	43,313	107,058	201,498
1912-13	49,287	42,510	105,875	197,672
1913-14	43,522	42,076	107,452	193,050
Average	48,785	42,991	105,539	197,315
1914-15	44,085	42,495	122,508	209,088
1915-16	48,441	42,424	107,595	198,460
1916-17	47,754	42,717	104,416	194,887
1917-18	52,686	42,491	108,175	203,352
1918-19	55,896	42,195	110,066	208,157
Average	49,772	42,464	110,553	202,789
1919-20	53,893	41,739	106,267	201,899
1920-21	54,108	41,273	106,946	202,327
1921-22	55,798	40,702	103,951	200,451
1922-23	55,979	40,904	103,800	200,683
1923-24	55,626	40,230	97,585	193,441
Average	55,081	40,970	103,709	199,760
1924-25	54,084	40,168	101,270	195,522
1925-26	54,987	40,130	103,498	198,615
1926-27	51,310	39,822	108,726	199,858
1927-28	52,408	39,838	109,720	201,966
1928-29	47,275	40,020	110,584	197,879
Average	52,013	39,996	106,759	198,768
1929-30	50,056	40,765	112,876	203,697
1930-31	51,377	40,935	98,547	190,859
1931-32	51,160	40,533	99,974	191,667
1932-33	52,928	40,345	102,713	195,986
1933-34	54,523	40,354	101,920	196,797
Average	52,009	40,586	103,206	195,801

APPENDIX V—*contd.**Area under coffee in Madras, Coorg and Mysore State—contd.*

(In acres.)

Year (July to June).	Madras.	Coorg.	Mysore.	Total.
1934-35	55,142	40,890	103,495	199,527
1935-36	56,274	41,053	106,962	204,289
1936-37	56,987	40,762	108,073	205,822
1937-38	56,901	41,129	103,505	201,535
1938-39	54,623	49,733	Not avail- able.	.
Average .	55,985	42,713	105,509	..

APPENDIX VI.

Number of plantations and the uncultivated area under coffee above 5 acres in 1935-36.

Province and State.	District.	No. of plantations.	Total area under coffee.	Area held by the planters, but not cultivated.	Percentage of uncultivated area to total.
			(Acres.)	(Acres.)	
Madras . . .	Nilgiris . . .	349	17,527	25,398	59.2
	Salem . . .	80	8,769	6,309	41.9
	Madura . . .	479	8,112	4,089	33.5
	Malabar . . .	83	5,534	19,516	77.9
	Coinbatore . . .	12	2,896	9,385	76.4
	Tinnevelly . . .	8	306	12,376	97.7
	Vizagapatam . . .	2	177	256	59.1
	South Kanara . . .	1	5	7	58.3
Total Madras . . .		1,014	43,326	77,336	64.1
Coorg . . .		1,202	38,721	24,589	38.8
Total British India . . .		2,216	82,057	101,925	55.4
Mysore . . .	Kadur . . .	3,017	74,586	22,224	22.9
	Hassan . . .	1,552	27,932	15,695	36.0
	Mysore . . .	3	485	83	14.6
Total Mysore . . .		4,572	103,003	38,002	26.9
Travancore . . .		17	1,029	2,244	68.6
Cochin . . .		18	2,006	4,909	71.0
Total States . . .		4,607	106,038	45,155	29.9
Grand total . . .		6,823	188,075	147,080	43.9

APPENDIX VII.
Sizes of coffee plantations and their area.

Year.	Holdings between 5 and 10 acres.					Holdings above 10 acres.					Holdings below 5 acres under coffee.*	Grand total of area under coffee.	
	No. of plantations.	Total area held.	Total area under coffee.	Per plantation.		No. of plantations.	Total area held.	Total area under coffee.	Per plantation.				
				Area held.	Area under coffee.				Area held.	Area under coffee.			
1931-32	4,413	22,910	(Acres.) 13,384	(Acres.) 5.2	3.0	5.4	(Acres.) 284,587	158,772	(Acres.) 126.9	71.0	56	27,252	199,412
1932-33	3,116	20,206	13,691	6.5	4.4	6.8	291,985	162,454	80.5	44.5	55	27,086	203,731
1933-34	3,035	20,260	14,004	6.7	4.6	6.9	297,123	169,919	81.1	46.4	57	20,843	204,766
1934-35	3,085	20,776	14,180	6.7	4.6	6.8	308,343	172,476	82.2	46.5	56	19,809	206,465
1935-36	3,122	20,909	14,146	6.7	4.5	6.8	314,266	174,015	84.9	47.0	55	24,468	212,629
1936-37	3,160	21,144	14,471	6.7	4.6	6.8	316,543	175,559	84.6	46.9	55	24,044	214,074
Average	3,323	21,034	13,980	6.3	4.2	6.6	302,465	168,959	87.6	48.9	56	23,917	206,847

*Includes estimates of areas for Travancore and Cochin States for 1931-32 to 1933-34 for which the published figures are not complete.

APPENDIX

Area under coffee plantations above

District	1931-32.		1932-33.		1933-34.	
	Area under coffee.	Percentage of area plucked.	Area under coffee.	Percentage of area plucked.	Area under coffee.	Percentage of area plucked.
Madras—						
Vizagapatam	260	70·8	262	82·4	252	81·7
Madura	8,207	95·5	7,672	97·6	7,694	99·1
Tinnevely	477	62·1	353	47·6	348	97·4
Coimbatore	2,601	98·1	2,580	98·7	2,878	98·7
Nilgiris	16,567	95·1	15,855	93·9	16,420	89·7
Salem	8,361	88·7	8,336	93·7	8,457	93·9
South Canara	5	100·0	5	100·0	5	100·0
Malabar	4,723	78·0	4,827	83·6	4,850	94·3
Total Madras	41,261	91·6	39,890	93·2	40,913	92·3
Coorg	38,375	97·6	38,561	95·6	39,364	95·4
Total British India	79,636	94·5	78,451	94·4	80,277	93·8
Mysore State—						
Mysore	421	94·5	428	93·9	432	99·1
Hassan	27,984	88·8	27,785	88·5	27,744	88·6
Kadur	61,380	80·2	67,110	74·7	72,480	77·7
Total Mysore State	89,785	82·9	95,323	78·8	100,656	80·8
Travancore	824	90·3	806	92·8	906	78·8
Cochin	1,915	85·6	1,915	85·3	2,139	85·5
Total Indian States	92,524	83·1	98,044	79·0	103,701	80·9
Grand total	172,160	88·3	176,495	85·8	183,978	86·5

VIII.

5 acres in different districts.

1934-35.		1935-36.		1936-37.		1937-38.		Average.	
Area under coffee.	Percent- age of area plucked.	Area under coffee.	Percent- age of area plucked.	Area under coffee.	Percent- age of area plucked.	Area under coffee.	Percent- age of area plucked.	Area under coffee.	Percent- age of area plucked.
217	73.3	253	81.9	216	73.1	217	72.8	240	76.6
8,057	77.3	8,112	77.5	8,244	70.9	8,218	88.5	8,038	86.6
371	90.8	306	91.8	265	75.8	308	86.7	347	78.9
2,878	95.3	2,896	94.7	2,893	96.6	2,893	96.6	2,893	97.0
17,194	85.2	17,527	93.8	17,475	93.5	17,802	93.4	16,977	92.1
8,502	94.5	8,769	94.9	8,873	96.0	8,912	96.4	8,610	94.0
5	100.0	5	100.0	5	100.0	5	100.0	5	100.0
5,297	84.0	5,534	85.4	5,598	86.4	5,740	84.1	5,225	85.1
42,581	86.1	43,402	93.6	43,649	88.8	44,095	91.9	42,256	91.1
38,629	98.4	38,721	97.2	39,163	93.8	39,282	97.0	38,871	96.4
81,210	91.9	82,123	95.3	82,812	91.1	83,377	94.4	81,127	93.6
477	89.7	485	88.2	486	97.3	486	98.2	459	94.4
27,921	87.5	27,932	87.5	28,000	87.2	28,127	86.9	27,928	87.9
73,112	82.2	74,586	85.3	75,691	84.8	66,713	91.4	70,153	82.3
101,510	83.7	103,008	85.9	104,177	85.5	95,326	90.1	98,540	84.0
966	77.7	1,029	74.1	1,076	70.8	979	79.5	941	80.6
1,895	95.3	2,006	95.8	1,965	95.2	1,980	86.0	1,974	87.0
104,371	88.8	106,038	86.0	107,218	85.5	98,285	89.9	101,454	84.1
185,581	87.4	188,161	90.0	190,030	88.0	181,662	91.9	182,581	88.8

APPENDIX X.

Average yield of coffee per acre.
(In lb.)

Year.	Madras.		Coorg.		Mysore.		Travancore.		Cochin.	
	Published* statistics.	Corrected† estimates.	Published* statistics.	Corrected† estimates.	Published* statistics.	Corrected† estimates.	Published* statistics.	Corrected† estimates.	Published* statistics.	Corrected† estimates.
1926-27	213	315	338	571	234	380	254	337	161	289
1927-28	331	438	222	227	221	282	452	634	124	178
1928-29	137	189	229	255	207	266	239	293	67	44
1929-30	230	385	445	690	230	365	29	119	155	415
1930-31	195	381	253	233	230	293	587	775	177	372
1931-32	197	304	258	431	217	233	29	23	109	276
1932-33	166	212	244	384	224	286	238	305	157	408
1933-34	266	403	235	433	198	209	213	170	270	527
1934-35	168	289	241	333	187	341	167	221	126	394
1935-36	318	480	278	459	192	365	251	276	333	340

* Indian Coffee Statistics.

† Marketing Survey figures.

APPENDIX XI.
Statement of area and production according to published statistics and marketing survey estimates.

Place.	Below 5 acres.			Between 5 and 10 acres.			Above 10 acres.			Total.		
	Area.	Produc- tion as per estimates*.	Cwt.	Area.	Produc- tion as per published statistics†	Cwt.	Area.	Production.		Area.	Production.	
								Published statistics.	Corrected estimates.		Published statistics. 5 & 7.	Corrected. estimates. 3, 5 & 8.
1	2	3	4	5	6	7	8	9	10	11		
	Acres.	Cwt.	Acres.	Cwt.	Acres.	Cwt.	Cwt.	Acres.	Cwt.	Cwt.		
1932-33—												
Madras . . .	12,888	15,074	2,465	2,887	37,575	57,452	71,124	52,928	60,339	89,085		
Coorg . . .	1,784	1,593	985	879	37,576	79,578	128,832	40,345	80,457	131,304		
Mysore . . .	7,390	11,613	10,241	16,072	85,082	134,227	217,263	102,713	150,299	244,948		
Travancore . . .	5,024	15,072	..	..	806	1,587	2,195	5,830	1,587	17,267		
Cochin . . .	..	..	..	..	1,915	2,291	6,976	1,915	2,291	6,976		
Total	27,086	43,352	13,691	19,838	162,954	275,135	426,390	203,731	294,973	489,580		
1933-34—												
Madras . . .	13,665	13,665	2,590	2,583	38,268	78,466	137,696	54,523	81,049	153,944		
Coorg . . .	990	866	1,066	929	38,293	77,765	148,063	40,354	78,694	149,858		
Mysore . . .	1,264	1,794	10,348	14,728	90,308	129,186	168,521	101,920	143,914	185,043		
Travancore . . .	4,924	14,772	..	..	906	1,356	1,375	5,830	1,356	16,147		
Cochin . . .	..	..	..	..	2,139	3,924	10,065	2,139	3,924	10,065		
Total	20,843	31,097	14,004	18,240	169,919	290,697	465,720	204,766	308,937	515,057		

1934-35—

Madras . . .	11,486	11,896	3,004	3,112	40,652	62,467	104,897	55,142	65,579	119,905
Coorg . . .	2,261	3,270	749	1,085	37,880	80,716	180,268	40,890	81,801	184,623
Mysore . . .	1,985	3,031	10,427	15,948	91,083	126,197	277,315	102,495	142,145	296,294
Travancore . . .	4,077	12,231	..	..	966	1,118	1,906	5,043	1,118	14,137
Cochin . . .	..	..	..	..	1,895	1,999	6,666	1,895	1,999	6,666
Total . . .	19,809	30,428	14,180	20,145	172,476	272,497	571,032	206,465	292,642	621,625
1935-36—										
Madras . . .	12,872	16,435	2,976	3,792	40,426	111,189	173,254	56,274	114,981	193,481
Coorg . . .	2,332	3,685	753	1,189	37,968	92,354	155,601	41,053	93,543	160,475
Mysore . . .	3,959	5,974	10,417	15,749	92,586	135,924	301,731	106,962	151,073	323,454
Travancore . . .	5,239	15,717	..	..	1,029	1,707	2,536	6,268	1,707	18,253
Cochin . . .	66	97	..	..	2,006	5,709	6,080	2,072	5,709	6,187
Total . . .	24,468	41,908	14,146	20,730	174,015	346,883	639,212	212,629	367,613	701,850
1936-37—										
Madras . . .	13,338	13,933	3,006	3,131	40,643	63,035	123,380	56,987	66,166	140,444
Coorg . . .	1,599	2,356	983	1,451	38,180	97,489	143,857	40,762	98,940	147,664
Mysore . . .	3,896	5,287	10,482	14,223	93,695	119,207	247,622	108,073	133,430	267,132
Travancore . . .	5,104	15,312	..	..	1,076	1,232	3,026	6,180	1,232	18,338
Cochin . . .	107	139	..	..	1,965	3,873	5,684	2,072	3,873	5,923
Total . . .	24,044	37,027	14,471	18,805	175,559	284,836	523,589	214,074	303,611	579,401

APPENDIX XI—contd.
Statement of area and production according to published statistics and marketing survey estimates—contd.

Place.	Below 5 acres.			Between 5 and 10 acres.			Above 10 acres.			Total.		
	Area.	Production as per estimates*.		Area.	Production as per published statistics†.	Cwt.	Area.	Production.		Area.	Production.	
		2	3					Published statistics.	Corrected estimates.		Published statistics.	Corrected estimates.
1							6	7	8	9	10	11
	Acres.			Acres.		Cwt.	Acres.	Cwt.	Cwt.	Acres.	Cwt.	Cwt.
Average of 5 years 1932-33 to 1936-37—												
Madras . . .	12,850	14,200		2,808	3,101		39,513	74,522	122,070	55,171	77,623	139,371
Coorg . . .	1,792	2,354		907	1,107		37,980	85,580	151,324	40,679	86,687	154,785
Mysore . . .	3,699	5,540		10,383	15,344		90,551	128,948	242,490	104,633	144,292	263,374
Travancore . . .	4,874	14,621		..	..		957	1,400	2,208	5,831	1,400	16,829
Cochin . . .	35	47		..	..		1,984	3,559	7,096	2,019	3,559	7,143
Total . . .	23,250	36,762		14,098	19,552		170,985	294,009	525,188	208,333	313,561	581,602

*No statistics are published in regard to production of coffee on plantations below 5 acres.

†The published figures for production of coffee on plantations between 5 and 10 acres fairly approximate to survey estimates.

APPENDIX XII.
Period of harvesting of the major crop in the chief producing countries.

Country.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
Brazil	...	...	...	...	...	...	...	...	...	...	...	...
Colombia	...	...	...	...	...	...	...	...	...	...	...	...
Costa Rica	...	...	...	...	...	...	...	...	...	...	...	...
Equador	...	...	...	...	...	...	...	...	...	...	...	...
Guadeloupe	...	...	...	...	...	...	...	...	...	...	...	...
Guatemala	...	...	...	...	...	...	...	...	...	...	...	...
Haiti	...	...	...	...	...	...	...	...	...	...	...	...
Netherlands Indies: Robusta	...	...	...	...	...	...	...	...	...	...	...	...
Kenya	...	...	...	...	...	...	...	...	...	...	...	...
Madagascar—	...	...	...	...	...	...	...	...	...	...	...	...
(1) Robusta	...	...	...	...	...	...	...	...	...	...	...	...
(2) Liberica	...	...	...	...	...	...	...	...	...	...	...	...
(3) Arabica	...	...	...	...	...	...	...	...	...	...	...	...
Uganda	...	...	...	...	...	...	...	...	...	...	...	...
Tanganyika	...	...	...	...	...	...	...	...	...	...	...	...
British India	...	...	...	...	...	...	...	...	...	...	...	...

Source.—International Institute of Agriculture. (Coffee in 1931 and 1932).

APPENDIX

Statement showing production of " Cherry " and " Parchment " coffees in Madras,

(1931-32 to

(In

	Vizaga- patam.	Madura.	Tinne- velly.	Coim- batore.	Nilgiris.	Salem.	Malabar.	Total Madras Presi- dency.
1931-32—								
Cherry	2	4,684	2	1,109	4,334	2,180	1,090	13,401
Parchment	911	4,352	139	5,385	25,904	12,739	4,543	53,973
1932-33—								
Cherry	7	3,769	2	1,259	3,791	1,023	2,042	11,893
Parchment	56	2,309	60	6,130	27,650	10,050	2,088	48,293
1933-34—								
Cherry	11	3,893	2	1,809	1,441	2,297	1,846	11,299
Parchment	10	2,543	18	13,324	24,530	21,750	6,957	69,132
1934-35 —								
Cherry	23	4,112	2	1,111	4,691	1,822	1,917	13,678
Parchment	37	2,712	70	3,871	28,178	14,745	2,002	51,615
1935-36—								
Cherry	24	5,641	2	2,255	21,741	6,652	2,980	39,275
Parchment	33	5,645	53	13,248	14,404	32,917	7,633	73,933
1936-37—								
Cherry	2	3,998	7	1,515	4,127	1,276	2,072	13,897
Parchment	25	1,711	13	7,186	33,037	7,481	2,306	51,759
1937-38—								
Cherry	..	2,357	31	1,356	4,064	1,520	3,615	12,943
Parchment	12	2,305	169	8,543	34,092	16,659	3,836	65,616
1938-39—								
Cherry	24	2,702	6	2,570	5,103	2,302	5,759	18,466
Parchment	17	3,807	160	11,094	36,110	27,931	5,112	84,231

XIII.

Coorg, Mysore, Travancore and Cochin for holdings above 5 acres.

1938-39.)

cwt.)

Coorg.	Mysore.	Hassan.	Kadur.	Total Mysore State.	Trivan- drum Division.	Devi- colam Division.	Kotta- yam Division.	Total Travan- core State.	Cochin State.	Grand total.
35,630	117	36,256	37,258	78,631	2	23	..	25	119	122,806
50,669	1,846	24,884	44,078	70,808	5	164	..	169	1,476	177,095
35,019	49	37,524	41,219	78,792	3	47	..	50	127	125,881
45,437	926	25,309	45,271	71,506	6	1,531	..	1,537	2,163	168,936
33,729	157	34,947	55,415	90,519	3	187	..	190	181	135,918
44,964	3,026	25,478	24,890	53,394	6	1,153	..	1,159	3,743	172,392
30,333	79	34,759	60,131	94,969	4	17	..	21	150	139,151
51,467	624	24,885	21,666	47,175	4	1,020	..	1,024	1,848	153,129
29,292	162	34,593	59,287	94,042	6	60	..	66	593	163,268
64,251	3,043	24,546	30,041	57,630	56	1,472	..	1,528	5,116	202,458
34,298	876	34,044	46,235	81,155	5	47	..	52	183	129,585
64,668	269	24,170	27,912	52,351	6	1,175	..	1,181	1,929	171,888
18,996	151	33,979	53,537	87,667	5	56	..	61	118	119,785
49,061	1,765	24,174	34,792	60,731	26	896	..	922	896	177,226
20,742	45	31,826	83,159	135,772	2	..	26	28	259	154,525
61,578	131	22,230	39,981	123,920	29	..	1,551	1,580	1,609	211,340

APPENDIX

*Monthly movement of coffee from**(Average of 1935-36**(In*

Month.	From Mysore.		From Coorg.		From Nilgiris.		From Nilgiris/Wynaad.		From Kannan Devan.	
	Parch-ment.	Cherry.	Parch-ment.	Cherry.	Parch-ment.	Cherry.	Parch-ment.	Cherry.	Parch-ment.	Cherry.
September	...	...	...	...	1,166	202*	...	...	...	...
October	...	86*	...	...	3,416	63*	...	...	...	...
November	589	904 $\frac{1}{2}$	3,561	150	8,477	945*	3,297	...	...	...
December	43,106	9,411	65,327	6,341	16,083	590*	11,429	225	484*	...
January	130,798	19,193	101,417	18,845	19,540	629*	18,148	325*	2,153	...
February	73,107	26,638	32,977	23,535	14,754	638	10,022	2,521	2,385	38
March	15,247	28,350	3,771	18,827	8,415	1,663	3,452	6,002	376	...
April	3,893	10,840	1,390	3,376	5,106	1,249	392	2,503	233	215
May	...	3,305	...	1,350	3,159	2,485	...	151*	57	15*
June	...	372	...	...	2,173	582*	...	19*	36*	...
July	...	...	...	...	204	190*	...	...	...	...
August	...	...	...	...	56	...	...	...	...	...

* Figures for

XIV.

producing to curing centres.

and 1936-37.)

bushels).

From Shevaroy's.		From Billighirangan.		From Anaimalais.		From Nelliampathis.		From Wynaad.	
Parch- ment.	Cherry.	Parch- ment.	Cherry.	Parch- ment.	Cherry.	Parch- ment.	Cherry.	Parch- ment.	Cherry.
253*	...	...	...	...	...	...	...	...	...
1,310*	...	...	...	142*	3*	...	...	...	...
609	...	...	...	1,474	120	...	...	...	...
4,090	...	2,131	90*	5,950	274	2,520*	...	...	...
13,759	...	7,120	147*	17,417	763	7,562	18*	...	544*
12,114	...	3,651	296*	9,099	1,221	7,177	828*	...	989
9,436	398	3,572	851	1,836	2,662	5,705	836*	...	319
2,726	898	1,494	393	262	1,299	1,766*	1,091*	...	...
1,822	1,120	4*	228	36*	55*	...	...	...	...
947*	2,805*	...	...	...	...	...	...	...	...
5,488*	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...

one year only.

APPENDIX XV.

Exports (by sea) of raw beans during 1905-06 to 1938-39.

(a) Empire countries.

(cwt.)

	United King- dom.	Aden and Depen- dencies.	Bahrein Islands.	Ceylon.	Burma.	Mauritius and De- penden- cies.	Canada.	Australia.	New Zealand.	Other British Posses- sions.	Total British Empire.	Grand total.
Average for 5 years ending 1906-10.	124,047	11	1,387	18,136	3,014	1,467	..	8,245	195	169	154,651	276,446
Average for 5 years ending 1914-15.	84,629	636	4,974	11,712	3,950	1,850	..	10,380	494	480	119,105	270,065
Average for 5 years ending 1919-20.	60,481	1,196	14,270	15,049	5,894	862	..	9,369	426	3,885	111,902	217,876
Average for 5 years ending 1924-25.	78,126	169	11,854	1,500	6,239	172	403	8,908	618	9,278	116,267	225,864
Average for 5 years ending 1929-30.	61,527	15	11,429	423	11,567	..	697	6,434	757	4,481	97,330	214,176
1930-31	78,488	..	10,441	332	3,944	..	659	6,168	984	47	101,063	296,833
1931-32	44,059	..	2,815	246	3,752	..	607	2,459	505	39	54,482	159,331
1932-33	51,868	..	284	206	4,069	..	600	5,635	851	24	63,537	177,246
1933-34	50,414	..	1,192	231	3,437	..	100	4,604	1,252	119	61,289	189,432
1934-35	36,005	..	45	221	3,426	..	505	5,996	1,234	90	47,522	144,410
1935-36	72,942	..	116	144	3,097	..	100	5,862	787	27	83,085	213,919
1936-37	34,993	..	1,066	207	3,009	..	353	6,060	1,108	16	46,812	212,834
1937-38	28,605	..	3,054	247	3,973	..	435	3,703	1,273	59	41,404	134,106
1938-39	69,725	..	..	..	..	..	..	5,869	..	..	..	184,800

(b) Other countries.
(Cwt.)

	Sweden.	Norway.	Denmark.	Germany.	Nether-lands.	Belgium.	France.	Italy.	Iraq.	United States of America.	Asiatic Turkey.	Arabia and Muscat territory.	Other foreign countries.
Average for 5 years ending 1909-10.	Nd.	Nd.	Nd.	2,725	491	6,552	102,179	475	Nd.	14	1,705	2,990	4,664
Average for 5 years ending 1914-15.	Nd.	46	20	7,963	2,576	7,614	109,562	919	Nd.	Nd.	6,028	4,358	11,874
Average for 5 years ending 1919-20.	Nd.	Nd.	Nd.	45	Nd.	Nd.	43,930	236	Nd.	30	20,222	21,021	20,490
Average for 5 years ending 1924-25.	269	6,242	340	7,352	8,243	6,252	62,822	3,310	Nd.	311	6,196	7,269	881
Average of 5 years ending 1929-30.	145	11,879	1,505	20,292	15,278	6,625	46,462	5,346	6,305	404	Nd.	2,349	266
1930-31	37	15,297	811	21,893	18,203	10,547	107,704	10,293	8,159	Nd.	Nd.	2,108	718
1931-32	250	15,909	1,304	16,318	9,423	6,370	43,070	5,514	5,526	Nd.	Nd.	678	487
1932-33	447	16,819	690	13,214	9,355	6,966	54,381	4,509	6,053	310	Nd.	261	704
1933-34	169	15,173	1,100	16,874	8,315	12,309	60,188	8,811	4,561	121	Nd.	99	423
1934-35	75	15,393	202	6,635	1,376	8,137	53,016*	5,951	2,033	201	3,563	143	163
1935-36	222	16,721	321	10,059	1,456	12,677	82,804	6,539	1,456	Nd.	3,297	Nd.	282
1936-37	500	33,962	Nd.	7,196	5,689	19,997	86,745	3,069	7,511	Nd.	19	90	1,224
1937-38	50	27,526	304	2,265	1,056	6,787	42,306	819	8,954	75	236	1,884	440
1938-39	..	22,501	..	1,132	5,066	9,924	37,926	573	7,230	..	..	..	..

NOTE.—(1) Mesopotamia included in Turkey Asiatic prior to 1921-22 and later up to 1926-27 included in other British Possessions.

(2) Egypt shown as British Possession between 1915-16 to 1923-24 and as other foreign country otherwise.

* Includes 21 cwt. from Pondicherry to France.

APPENDIX XVI.

*Exports (by sea)—share of different provinces—imports and re-exports (by sea) of raw bean
(In cwt.)*

Fiscal year.	Exports.						Total.	
	Bengal.	Bombay.	Sind.	Madras.	Others.	Total.	Imports.	Re-exports.
1905-06 .	460	10,094	102	352,319	25	362,990	4,083	2,226
1906-07 .	282	6,347	109	223,541	99	230,378	4,082	1,361
1907-08 .	139	2,340	115	244,957	100	247,651	4,743	1,137
1908-09 .	14	1,971	99	302,320	389	304,798	5,196	1,273
1909-10 .	5	2,199	...	233,965	254	236,423	4,280	1,053
1910-11 .	207	5,043	9	270,397	215	275,871	2,489	981
1911-12 .	16	7,999	3	237,052	120	245,190	2,507	1,277
1912-13 .	10	5,705	68	264,882	12	270,677	1,752	1,178
1913-14 .	64	2,491	...	261,758	...	264,313	3,094	1,370
1914-15 .	20	15,901	157	278,151	49	294,278	7,026	4,925
1915-16 .	20	12,079	162	169,097	107	181,465	7,628	5,060
1916-17 .	14	60,953	1,025	141,223	...	203,215	8,201	3,075
1917-18 .	8	104,067	3,125	94,614	50	201,864	18,944	10,572
1918-19 .	...	60,850	1,603	161,496	74	224,023	763	3,793
1919-20 .	56	38,917	109	239,699	30	278,811	34,415	21,523
1920-21 .	11	15,110	276	223,160	114	238,680	31,468	23,594
1921-22 .	27	15,820	64	226,799	57	242,767	31,429	16,492
1922-23 .	67	7,017	5	167,867	59	175,015	45,772	21,020
1923-24 .	13	9,375	3	214,689	95	224,175	35,000	18,172
1924-25 .	1	8,588	4	239,979	63	248,635	23,224	5,299
1925-26 .	28	8,779	1	202,565	26	211,399	22,107	5,103
1926-27 .	6	4,457	...	150,194	129	154,786	37,954	6,752
1927-28 .	12	6,154	7	306,613	866	313,652	43,843	4,457
1928-29 .	10	3,660	...	198,092	43	201,805	42,750	4,482
1929-30 .	20	4,466	...	184,681	68	189,235	53,325	9,109
1930-31 .	11	5,485	17	291,309	11	296,833	39,988	4,836
1931-32 .	2	2,479	17	156,805	28	159,331	5,154	2,752
1932-33 .	1	1,365	...	175,880	...	177,246	1,558	159
1933-34 .	...	1,516	...	187,916	...	189,432	99	...
1934-35 .	...	550	...	143,804	26	144,380	1,012	6
1935-36 .	...	2,233	...	216,638	48	218,919	488	...
1936-37 .	1	4,786	...	208,851	...	213,638	5,734	1
1937-38 .	107	1,872	...	133,163	...	135,142	1,093	...
1938-39 .	45	4,481	...	180,274	...	184,800	30	...

APPENDIX XVII.

Monthly exports (by sea) of raw beans.

(In cwt.)

Month.	1931-32.	1932-33.	1933-34.	1934-35.	1935-36.	Average	1936-37.	1937-38.	1938-39.
April . . .	32,064	40,967	24,453	28,363	15,902	28,350	38,054	12,965	25,401
May . . .	14,794	6,757	28,452	20,977	30,747	20,345	35,449	14,189	9,248
June . . .	11,499	17,056	7,447	11,571	20,696	13,654	7,846	5,988	9,838
July . . .	595	397	6,851	687	234	1,753	5,209	361	1,601
August . . .	128	38	932	32	1,579	542	2,961	983	1,991
September . . .	1,336	4,613	349	2,057	6,004	2,872	20,524	5,394	1,700
October . . .	19,001	19,991	10,920	13,103	12,363	15,076	11,210	12,924	13,361
November . . .	3,483	5,703	13,282	2,503	7,452	6,484	12,095	8,935	3,247
December . . .	1,010	4,092	7,567	3,383	3,247	3,860	16,991	5,635	5,846
January . . .	2,447	5,993	11,647	6,686	11,010	7,556	15,966	11,336	27,313
February . . .	42,599	19,131	35,320	18,043	34,905	30,000	23,697	21,189	27,727
March . . .	26,644	48,439	38,775	33,558	71,812	43,845	20,607	35,243	57,535
Total . . .	155,600	173,177	185,995	140,963	215,951	174,337	210,629	135,142	184,808

APPENDIX XVIII.

Net available supplies in India.

(Cwt.)

1932-33—

Estimated production	489,580
Imports*	348
Total supplies	489,928

Exports*	174,724
Estimated quantity retained by growers	10,000
Total	184,724

Net available supplies	305,204
Per capita consumption in lb.	0·099
Per capita consumption in cups	5

1933-34—

Estimated production	515,057
Imports*	531
Total supplies	515,588

Exports*	175,911
Estimated quantity retained by growers	10,000
Total	185,911

Net available supplies	329,677
Per capita consumption in lb.	0·106
Per capita consumption in cups	5·3

1934-35—

Estimated production	621,625
Imports*	1,634
Total supplies	623,259

Exports*	159,861
Estimated quantity retained by growers	10,000
Total	169,861

Net available supplies	453,398
Per capita consumption in lb.	0·144
Per capita consumption in cups	7·2

APPENDIX XVIII—*contd.**Net available supplies in India—contd.*

1935-36—

Estimated production	701,850
Imports*	647
Total supplies	702,497
Exports*	257,157
Estimated quantity retained by growers	10,000
Total	267,157
Net available supplies	435,340
<i>Per capita</i> consumption in lb.	0·137
<i>Per capita</i> consumption in cups	6·9

1936-37—

Estimated production	579,401
Imports*	7,246
Total supplies	586,647
Exports*	139,020
Estimated quantity retained by growers	10,000
Total	149,020
Net available supplies	437,627
<i>Per capita</i> consumption in lb.	0·136
<i>Per capita</i> consumption in cups	6·8

* The figures are for the period December to November.

APPENDIX XIX.

Imports and exports (by sea) of raw beans to and from Burma.

(In cwt.)

Year.	Imports from						Exports to			Total.		
	Bombay.	Madras.	Other Indian ports.	Straits Settlements.	Sumatra.	Java.	Other countries.	Total.	Madras.		Other Indian ports.	Straits Settlements.
Average of 5 years 1905-08 to 1909-10.	4	2,886	172	3,078	...	9	9	6,108	...	...	...	...
Average of 5 years 1910-11 to 1914-15.	102	3,769	79	2,323	...	12	2	6,287	...	...	5	5
Average of 5 years 1915-16 to 1919-20.	...	5,842	52	1,069	...	...	1	6,964	...	...	230	230
Average of 5 years 1920-21 to 1924-25.	...	6,162	78	3,253	...	74	3	9,570	...	...	...	...
Average of 5 years 1925-26 to 1929-30.	...	11,341	226	3,194	27	124	1	14,913	10	11	120	141
1930-31	38	3,895	11	2,467	...	304	...	6,715	72	96	...	168
1931-32	99	3,625	28	461	...	...	...	4,213	300	22	21	843
1932-33	...	4,069	...	6	...	...	...	4,075	120	19	...	139
1933-34	207	3,230	...	...	...	...	...	3,437	...	99	...	99
1934-35	194	3,227	5	...	...	...	2	3,428	610	402	...	1,012+30*
1935-36	65	2,984	48	...	...	...	...	3,097	404	84	...	488+120*
1936-37	...	...	...	...	...	...	...	3,009†	...	...	...	5,734†
1937-38	...	...	...	...	...	...	...	3,973†	...	...	...	1,093†

* 30 cwt. were exported to Iraq and 129 cwt to United Kingdom.

† Details are not available.

APPENDIX XX.

Estimated annual consumption of coffee in provinces and certain States in India.

(In cwt.)

	1933-34.	1934-35.	1935-36.	1936-37.	1937-38.
Mysore*	80,400	127,900	128,900	..	..
Coorg*	3,000	3,000	3,000	..	..
Madras*	225,000	302,000	280,000	..	..
Cochin*	8,900	7,100	6,700	..	..
Travancore*	17,900	13,900	19,500	..	..
Bombay	6,246	7,002	5,806	7,149	5,782
Nizam's Dominions	1,680	2,125	1,805	2,365	2,150
Sind and British Baluchistan	351	266	..	..	280
Punjab including North-West Frontier Province and Delhi.	1,679	1,576	1,709	1,601	1,062
Central Provinces and Berar	141	582	501	596	597
Bengal	1,007	762	1,656	1,505	1,435
United Provinces of Agra and Oudh.	680	600	550	557	574
Bihar and Orissa	223	278	269	606	859
Rajputana	133	65	86	87	90
Assam	38	38	33	54	44
Central India	112	71	104	80	88
Kashmir	12	3	2	4	3
Bihar†	..	..	..	..	238
Orissa†	..	..	..	..	621
North-West Frontier Province†	..	..	..	..	192
Punjab†	..	..	..	..	630
Delhi†	..	..	..	..	240

* The figures are marketing survey estimates.

† Available only for 1937-38.

APPEN

Monthly prices of coffee

(In shillings)

Month.	1934.			1935.			Indian.
	Indian.	Costa Rica Good Middling.	Santos Superior.	Indian.	Costa Rica Good Middling.	Santos Superior.	
January	72 0	100 0	43 6	60 0	75 0	47 0	60 0
February	75 0	105 0	52 0	60 0	70 0	47 0	60 0
March	75 0	105 0	53 6	56 0	68 0	42 6	55 0
April	75 0	105 0	50 0	56 0	78 0	39 6	52 0
May	78 0	105 0	50 0	56 0	75 0	36 0	50 0
June	73 0	105 0	50 0	56 0	75 0	37 0	48 0
July	73 0	105 0	46 0	56 0	75 0	36 0	46 0
August	73 0	105 0	48 0	56 0	70 0	36 0	46 0
September	70 0	100 0	48 6	56 0	70 0	37 0	48 0
October	70 0	95 0	48 6	58 0	70 0	39 6	50 0
November	65 0	85 0	49 0	60 0	70 0	39 0	50 0
December	60 0	80 0	48 0	60 0	65 0	39 9	52 0
Average	71 2	99 7	48 11	57 6	71 9	39 8	51 5

DIX XXI.

in London market.

per cwt.)

1936.		1937.			1938.			1939.		
Costa Rica Good Middling.	Santos Superior.	Indian.	Costa Rica Good Middling.	Santos Superior.	Indian.	Costa Rica Good Middling.	Santos Superior.	Indian.	Costa Rica Good Middling.	Santos Superior.
65 0	37 6	55 0	65 0	49 0	57 0	57 0	33 0	65 0	66 0	31 0
65 0	40 6	60 0	67 0	53 0	56 0	60 0	33 0	62 0	66 0	30 9
65 0	38 6	62 0	70 0	48 0	58 0	60 0	31 0	58 0	66 0	29 9
65 0	38 0	62 0	70 0	49 0	60 0	63 0	29 0	55 0	70 0	29 6
65 0	38 0	...	70 0	51 6	58 0	63 0	30 3	55 0	72 0	30 3
65 0	38 6	68 0	70 0	54 0	58 0	60 0	29 3	56 0	72 0	29 0
63 0	38 6	68 0	70 0	53 0	58 0	58 0	29 0	56 0	72 0	29 6
63 0	40 6	68 0	70 0	53 0	58 0	56 0	29 6	60 0	72 0	29 6
65 0	41 3	68 0	70 0	50 0	60 0	56 0	32 9	...	...	...
65 0	41 0	68 0	70 0	51 0	65 0	60 0	32 9	...	...	...
65 0	44 0	64 0	65 0	<i>Nil</i>	67 0	64 0	33 0	...	...	...
65 0	47 3	57 0	57 0	31 6	67 0	66 0	33 0	...	...	...
64 8	40 4	63 8	67 10	49 7	60 2	60 3	31 4	58 4	69 0	29 11

APPENDIX XXII.
Monthly movement of coffee into provinces and certain States.
 (Average 1936 to 1938.)
 (In cwt.)

Province or State.	January.	February.	March.	April.	May.	June.	July.	August.	Septem-ber.	October.	November.	Decem-ber.	Total.
Assam . . .	2	2	1	2	2	1	Negligible	2	1	1	2	2	18
Bengal . . .	184	187	243	158	156	125	98	136	130	218	112	240	2,019
Bihar and Orissa	128	26	47	40	44	43	54	43	42	40	55	62	624
United Provinces	61	59	42	43	35	35	46	50	37	56	58	63	585
Punjab including Delhi and N.-W. F. P.	106	112	94	107	328	239	68	76	54	135	128	125	1,600
Sind and British Baluchistan.	19	19	18	17	28	21	14	16	26	26	35	17	256
C. P. and Berar .	68	44	46	40	26	22	41	43	48	53	58	71	560
Bombay . . .	1,244	1,966	1,537	1,700	1,829	245	180	237	296	446	401	1,013	11,094
Madras . . .	1,214	1,419	2,008	1,829	1,428	1,486	1,484	1,209	1,203	974	907	1,133	16,298
Rajputana . . .	11	11	8	9	3	4	7	5	4	7	16	10	95
Central India . .	8	12	5	3	1	5	10	10	8	9	10	10	91
Nizam's Dominions	284	180	201	139	125	159	129	197	190	163	195	232	2,185
Mysore . . .	634	504	358	413	583	426	395	442	450	325	286	467	5,283
Travancore . . .	412	245	240	296	330	296	249	331	422	237	259	282	3,608
Cochin . . .	344	240	348	354	395	634	936	878	409	406	261	420	5,625
Total . . .	4,719	5,026	5,205	5,150	5,313	3,732	3,715	3,677	3,350	3,096	2,811	4,147	49,941

APPENDIX XXIII.

Curers' average monthly prices of arabica "Plantation" coffee in Mangalore.

(Prices in Rupees per cwt.)

Month.	"Pb"	"A."	"B."	"C."	"T."	F. A. Q. "Plantation" assortment.
	Rs. A.	Rs. A.	Rs. A.	Rs. A.	Rs. A.	Rs. A.
1933 :						
December	64 8	43 8	35 5	35 5	34 12	...
1934 :						
January	61 11	42 0	36 2	36 2	34 0	...
February	67 0	48 0	41 10	41 10	37 0	48 3
March	67 8	48 0	40 8	40 8	35 10	47 11
April	74 0	...	...	...	35 14	48 9
May	74 0	...	...	...	...	48 1
November	64 0	46 0	...	...	36 0	45 0
December	62 0	42 8	...	...	38 0	49 4
1935 :						
January	62 12	43 12	38 15	38 15	34 15	43 0
February	62 15	43 13	37 12	37 12	36 1	44 5
March	60 10	40 4	34 15	34 15	33 11	41 7
April	56 10	37 4	36 1	31 12	31 4	38 6
May	...	...	33 11	...	...	38 15
November	...	...	31 4	...	...	36 0
December	46 5	35 13	31 15	29 8	26 4	33 12
1936 :						
January	44 11	34 10	30 8	28 2	25 11	33 9
February	42 14	33 9	30 1	27 11	25 5	32 13
March	39 1	30 11	27 7	25 7	23 9	29 12
April	40 0	30 5	27 0	23 13	22 4	29 2
May	41 4	29 3	25 12	23 1	21 3	26 13
November	43 8	32 0	29 8	25 8	25 4	33 0
December	48 9	35 5	32 12	30 3	28 3	35 2
1937 :						
January	49 9	36 3	33 14	32 8	31 5	36 4
February	51 15	37 12	35 5	34 1	33 0	37 14
March	59 5	40 9	37 9	35 11	33 1	40 11
April	58 9	38 3	35 13	33 11	30 4	38 13
May	57 8	37 0	34 4	32 0	28 0	37 4
November	45 0	...	33 8	...	...	35 0
December	...	...	...	...	...	32 9
1938 :						
January	44 4	29 8	26 0	24 1	21 12	29 1
February	43 7	30 2	26 4	24 8	21 7	29 6
March	44 9	30 9	28 4	26 1	21 14	30 7
April	48 6	32 11	29 5	26 9	23 7	32 0
May	50 0	34 8	30 8	28 0	23 4	33 12
November	45 0	31 12	29 12	24 12	...	34 12
December	...	...	...	...	...	34 8

APPENDIX XXIII—*contd.**Curers' average monthly prices of arabica "Plantation" coffee in Mangalore.*

(Prices in Rupees per cwt.)

Month.	"Pb."	"A."	"B."	"C."	"T."	F. A. Q. "Plantation" assortment.
	Rs. A.	Rs. A.	Rs. A.	Rs. A.	Rs. A.	Rs. A.
1939 :						
January	43 10	33 11	30 1	28 8	26 13	32 13
February	42 13	33 7	30 15	28 11	28 15	33 2
March	40 7	31 11	29 6	27 6	26 13	31 6
April	37 8	30 11	28 15	27 1	26 3	30 4
May	38 0	33 6	31 10	30 6	26 4	32 10
November	...	...	...	...	...	32 8
December	47 0	...	36 5	34 1	33 3	36 8
1940 :						
January	40 7	37 9	36 5	32 4	34 8	37 5
February	43 10	39 11	38 8	37 4	35 0	39 3
March	52 1	45 9	42 13	40 12	39 8	44 12
April	45 13	40 13	38 9	36 9	34 15	39 15
*May	41 6	38 10	35 14	33 8	30 14	37 4

* Up to 10th May.

APPENDIX XXIV (c).
Average monthly wholesale prices of "Plantation", "Peaberry" and "Triage" in Travancore.
(Per cwt.)

Month	1935.		1936		1937.		1938.		1939.	
	"Peaberry."	"Triage."	"Peaberry."	"Triage."	"Peaberry."	"Triage."	"Peaberry."	"Triage."	"Peaberry."	"Triage."
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
January . . .	55 0 0	19 0 9	55 0 0	17 0 0	54 0 0	19 6 0	56 8 0	20 8 0	51 0 0	22 8 0
February . . .	54 8 0	18 0 4	53 8 0	16 8 0	55 0 0	18 10 0	56 0 0	19 12 0	52 0 0	24 8 0
March . . .	55 0 0	19 0 9	54 0 0	17 8 0	56 8 0	19 8 0	55 8 0	20 2 0	52 8 0	24 0 0
April . . .	56 0 0	18 0 0	55 0 0	17 0 0	56 0 0	19 7 0	55 4 0	19 14 0	52 8 0	22 0 0
May . . .	55 0 0	18 12 0	53 0 0	17 8 0	56 8 0	19 2 0	55 0 0	19 10 0	52 0 0	21 8 0
June . . .	54 0 0	17 12 0	52 8 0	16 8 0	54 8 0	18 8 0	55 4 0	19 4 0	51 0 0	22 8 0
July . . .	53 8 0	17 4 0	52 0 0	15 12 0	54 6 0	18 6 0	55 0 0	18 14 0	51 8 0	21 8 0
August . . .	54 0 0	16 0 0	51 8 0	14 8 0	54 4 0	17 12 0	54 12 0	18 12 0	51 0 0	21 12 0
September . . .	54 0 0	16 8 0	52 0 0	15 0 0	54 8 0	18 4 0	55 0 0	19 0 0	51 8 0	22 0 0
October . . .	54 8 0	17 0 0	52 8 0	15 8 0	55 8 0	18 12 0	55 4 0	19 4 0	51 8 0	22 0 0
November . . .	55 0 0	18 4 0	53 0 0	16 12 0	56 0 0	19 4 0	55 4 0	19 4 0	52 0 0	23 8 0
December . . .	54 8 0	20 0 0	52 8 0	18 8 0	56 8 0	20 0 0	52 8 0	22 0 0	52 0 0	24 0 0
Average . . .	54 9 0	17 15 4	53 1 0	16 8 0	55 5 0	18 14 7	55 2 0	19 11 0	51 11 0	22 9 4

APPEN

Average monthly wholesale prices

(Per

Month.	1935.				1936.				
	Plantation.		Cherry.		Plantation.		Cherry.		Plants
	Pb.	Flats.	Pb.	Flats.	Pb.	Flats.	Pb.	Flats.	Pb.
	Rs. A.	Rs. A.	Rs. A.	Rs. A.	Rs. A.	Rs. A.	Rs. A.	Rs. A.	Rs. A.
January . . .	77 8	56 8	56 12	39 0	52 14	39 0	50 0	34 0	53 0
February . . .	76 0	55 0	55 0	39 0	42 8	38 8	39 8	37 0	53 11
March . . .	73 0	53 8	55 0	39 0	42 8	38 8	39 8	37 0	55 12
April . . .	70 0	52 0	55 0	39 0	42 8	38 8	39 8	37 0	65 0
May . . .	70 0	52 0	55 0	39 0	44 2	37 14	39 6	35 12	64 6
June . . .	65 0	44 0	55 0	34 0	47 8	34 8	37 8	30 8	61 6
July . . .	64 0	44 0	54 8	34 0	47 0	34 0	37 0	30 0	60 8
August . . .	61 0	44 0	53 0	34 0	46 4	34 12	35 8	30 0	60 13
September . . .	59 0	41 8	51 8	34 0	44 0	33 8	34 8	30 0	61 0
October . . .	57 0	39 0	50 0	34 0	44 0	33 8	34 8	30 0	61 0.
November . . .	57 0	39 0	50 0	34 0	45 4	33 8	37 2	30 0	61 0.
December . . .	53 0	39 0	50 0	34 0	49 0	33 8	45 0	30 0	57 0
Average . . .	65 3	46 10	53 6	36 1	45 10	35 13	39 1	32 10	59 9

DIX XXIV (b).

of coffee in Bangalore.

cwt.)

1937.			1938.				1939.			
tion.	Cherry.		Plantation.		Cherry.		Plantation.		Cherry.	
Flats.	Pb.	Flats.	Pb.	Flats.	Pb.	Flats.	Pb.	Flats.	Pb.	Flats.
Rs. A.	Rs. A.	Rs. A.	Rs. A.	Rs. A.	Rs. A.	Rs. A.	Rs. A.	R. A.	Rs. A.	Rs. A.
37 10	45 0	31 0	52 13	33 10	37 6	29 0	48 13	39 10	38 0	32 6
40 0	43 11	29 11	47 8	32 8	37 0	28 0	46 0	36 0	38 0	32 0
42 8	44 8	33 8	47 8	32 8	37 0	28 0	45 12	36 12	35 8	29 0
44 0	44 8	37 8	47 12	32 8	37 0	28 0	45 8	36 3	34 8	26 0
43 6	43 15	36 15	49 0	35 5	37 11	28 0	45 10	35 14	34 10	26 12
43 0	43 8	36 8	51 0	41 0	39 0	28 0	49 0	37 0	36 8	29 0
42 4	42 6	35 15	51 0	41 0	41 0	33 0	47 13	37 0	36 8	29 0
43 2	44 0	35 12	54 0	43 0	37 0	35 0	47 8	37 0	36 8	29 0
44 0	44 0	35 12	54 0	43 12	42 0	34 4	47 8	37 0	36 8	29 0
44 0	44 0	35 12	52 8	42 8	40 8	32 8	47 8	37 0	36 8	29 0
43 3	43 0	34 10	52 0	43 0	39 0	31 8	48 0	37 5	36 8	29 0
36 0	39 0	31 0	52 0	44 0	39 0	33 5	52 0	42 5	39 0	35 0
41 15	43 7	34 8	50 15	38 12	38 10	30 11	47 9	37 7	36 9	29 10

Average monthly wholesale prices of Nilgiri "Peaberry" and

Month.	1933.				1934.				Nil
	Nilgiri.		Cherry.		Nilgiri.		Cherry.		
	"Pea- berry."	"Assort- ment."	"Pea- berry."	"Assort- ment."	"Pea- berry."	"Assort- ment."	"Pea- berry."	"Assort- ment."	
	Rs. A.	Rs. A.	Rs. A.	Rs. A.	Rs. A.	Rs. A.	Rs. A.	Rs. A.	Rs. A.
January . . .	100 0	85 0	80 0	65 0	85 0	70 0	75 0	46 0	95 0
February . . .	90 0	85 0	75 0	65 0	90 0	75 0	75 0	55 0	95 0
March . . .	85 0	70 0	75 0	60 0	95 0	85 0	70 0	55 0	90 0
April . . .	85 0	80 0	70 0	60 0	95 0	80 0	70 0	55 0	90 0
May . . .	90 0	80 0	70 0	60 0	100 0	80 0	70 0	55 0	90 0
June . . .	95 0	90 0	70 0	60 0	100 0	80 0	70 0	55 0	90 0
July . . .	100 0	85 0	75 0	60 0	100 0	80 0	70 0	52 0	90 0
August . . .	100 0	85 0	75 0	60 0	100 0	80 0	70 0	52 0	90 0
September . . .	100 0	85 0	75 0	60 0	100 0	80 0	70 0	52 0	90 0
October . . .	100 0	85 0	75 0	60 0	104 0	75 0	70 0	52 0	90 0
November . . .	100 0	85 0	75 0	60 0	100 0	75 0	70 0	52 0	90 0
December . . .	95 0	75 0	75 0	60 0	100 0	75 0	70 0	52 0	90 0
Average . . .	95 0	82 8	74 3	60 13	97 7	77 15	70 13	52 12	90 13

DIX XXIV (c).

"Assortment" and Cherry "Peaberry" and "Assortment" in Calcutta.

1935.			1936.				1937.			
girl.	Cherry.		Nilgiri.		Cherry.		Nilgiri.		Cherry.	
"Assortment."	"Peaberry."	"Assortment."	"Peaberry."	"Assortment."	"Peaberry."	"Assortment."	"Peaberry."	"Assortment."	"Peaberry."	"Assortment."
Rs. A.	Rs. A.	Rs. A.	Rs. A.	Rs. A.	Rs. A.	Rs. A.	Rs. A.	Rs. A.	Rs. A.	Rs. A.
75 0	73 0	50 0	85 0	54 0	62 0	45 0	64 8	49 0	51 0	36 0
75 0	73 0	50 0	80 0	68 0	56 0	50 0	67 8	50 0	48 8	34 0
75 0	73 0	50 0	80 0	68 0	56 0	50 0	71 8	52 8	51 8	36 0
75 0	73 0	50 0	80 0	68 0	56 0	50 0	70 0	56 8	51 8	42 0
75 0	73 0	50 0	80 0	68 0	56 0	50 0	70 0	56 8	51 8	43 0
75 0	73 0	48 0	80 0	68 0	56 0	50 0	76 8	56 0	51 8	43 0
75 0	73 0	48 0	75 0	65 0	55 0	40 0	74 0	53 0	51 8	42 0
70 0	70 0	48 0	75 0	65 0	55 0	42 0	75 8	53 0	50 0	42 0
70 0	70 0	48 0	65 0	50 0	45 0	40 0	78 0	53 8	50 0	42 0
70 0	70 0	48 0	65 0	50 0	45 0	50 0	78 0	55 8	52 0	42 0
60 0	70 0	48 0	65 0	50 0	60 0	55 0	78 0	55 8	52 0	42 0
60 0	70 0	48 0	65 0	50 0	60 0	55 0	72 0	49 0	47 0	37 0
71 4	71 12	48 13	74 9	60 5	55 3	48 1	74 7	53 5	50 11	40 1

APPENDIX XXV.

Description of washing channels in Costa Rica.

(Supplied by a London firm.)

Uses.—The term “washing channel” is somewhat misleading for the coffee is not only washed in the channel, but is also graded by weight into 3 or 4 qualities. This grading by weight is different from the grading by size and shape which is carried out subsequently in the various types of grading machines.

Position.—The washing channel is usually situated alongside the cement “Patio” or drying ground in such a way that by the force of water from the fermenting tanks, coffee may be carried through the channel to the draining plates on the “Patio”. In this way unnecessary labour is avoided. Arrangements must be made for a constant flow of at least 500 gallons of water per minute during the process of washing and grading.

Dimensions.—(Of a channel required to deal with fermented coffee from about 215 bushels of cherry).

The channel should be 300 feet long with straight runs of at least 100 feet, 24 inches wide and 18 inches deep. The usual lay out is in the form of a close zigzag, each straight run being separated from the other by a path about 18 inches wide for the operator.

Construction.—The channel is usually made of concrete and the bottom is lined with glazed tiles to give a smooth acid-resisting surface. The gradient should be 1—2 per cent except at the bends, where it should be increased to prevent coffee clogging.

At the end of each run, there is an adjustable weir to control the depth of water. These weirs are usually made of slots of hard wood $\frac{1}{2}$ inch thick, and their ends engage in two vertical grooves in the side walls of the channel. By slipping these slots into position, one above the other, the height of the weir may be increased by $\frac{1}{2}$ inch intervals.

Method of use.—(1) *Washing.*—The weirs are built up to 6 or 8 inches depending on the amount of fermented coffee available, but a maximum of 10 inches should not be exceeded, otherwise efficient stirring will be impossible.

The fermented coffee is then released from the tanks into the first section, but care is taken to see that it is not filled so much that the coffee may pass over the first weir into the next section.

When the first section is full enough the stirrer is introduced immediately above the first weir and is pushed down until the paddle rests across the bottom of the channel. The stirrer consists of a 6 foot wooden handle with a cross-piece or stirring paddle 20 inches long and 4 inches wide fixed at right angles across the end. The paddle is perforated by a row of $\frac{1}{2}$ inch holes to reduce its resistance to the water and to promote eddy currents whilst stirring.

The stirrer is pushed up the channel against the flow of water with long even strokes. At the end of each forward stroke a short backward stroke imparts a turning motion to the coffee which loosens the fermented matter, allowing it to be carried away. When the stirrer has reached the upper end of the section, a pause is made to allow the loosened fermented matter to be carried away over the weir. As soon as the water has once more become clear the process is repeated until all the fermented matter, together with any coffee pulp, has been washed away.

During the washing process the coffee tends to build up against the weir, and it may often be necessary to increase the height of the weir to prevent the coffee passing over into the next section.

It will be noticed that a number of beans rise to the surface and are carried away. These are either empty husks or very defective and immature beans.

The washing process takes about $1\frac{1}{2}$ hours for a full charge of fermented coffee. Much time and labour is saved if some form of a mechanical beater is placed at the entrance to the channel, by means of which most of the fermentable matter is removed from the coffee, allowing more time and care for the grading.

(2) *Grading.*—The level of the first weir is lowered by removing the slots until the top is level with the clean coffee, lying at the bottom of the channel. Another slot is then removed so that the topmost layer of coffee is carried over the weir into the second section. This layer contains the lighter coffee brought up by the action of the stirrer. The stirrer is again introduced and worked upwards so that the residue of the lighter coffee may be brought to the top and swept over the weir by the return waves of water created by the stirrer. If, however, light coffee cannot be carried over the weir by the return waves, even after several stirrings, another slot must be removed.

APPENDIX XXV—*contd.*

When the coffee in the first section is uniform, the level of the second weir is adjusted and the stirring process repeated as before.

In this way, coffee is separated into three qualities by weight, the lightest being in the lowest section of the channel.

The weirs are then removed one by one, beginning at the lowest, and coffee passes on to the draining plates on the "Patio".

Such grading, however, requires great skill and experience.

APPENDIX XXVI.

List of chief curing works.

MAJOR CURING YARDS.

1. Messrs. Peirce, Leslie & Co., Ltd.,
Estate Department,
Mangalore.
2. Messrs. A. J. Saldhana & Sons,
Bolloor Coffee Works,
Mangalore.
3. Messrs. P. F. X. Saldhana & Sons,
Highland Coffee Works,
Kankanady P. O.,
Mangalore.
4. Messrs. Volkart Bros.,
Coffee Curing Works,
Mangalore.
5. Messrs. Aspinwall & Co., Ltd.,
Pullicoon Coffee Works,
Tellicherry.
6. Messrs. Peirce, Leslie & Co., Ltd.,
Chonadum Coffee Curing Works,
Tellicherry.
7. Messrs. Volkart Brothers,
Moracoon Coffee Curing Works,
Tellicherry.
8. Messrs. Peirce, Leslie & Co., Ltd.,
Mamally Coffee Curing Works,
Calicut.
9. Messrs. Peirce, Leslie & Co., Ltd.,
Managing Agents,
The Anupura Coffee Works Co., Ltd.,
Coimbatore.
10. Messrs. T. Stanes & Co., Ltd.,
Coffee Curing Works,
Coimbatore.
11. The Hunsur Works, Hunsur (Mysore State).
12. The Chamundi Curing Works,
Vani Vilasa Mohalla P. O., Mysore.
13. The Mysore Coffee Curing Works, Ltd.,
Chikmagalur.

MINOR CURING YARDS.

1. The Islamia Coffee Curing Works,
Mettupalaiyam.
 2. The Nilgiri Coffee Curing Works,
Mettupalaiyam.
 3. The Rahimania Coffee Curing Works,
Mettupalaiyam.
 4. Sri D. Sakamma's Coffee Works,
Basavangudi P. O., Bangalore.
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APPENDIX XXVII (a).

Mangalore Coffee and Produce Contract.

.....have this day sold to/bought from
tons of.....Estate "Plantation" coffee.....
Estate "Plantation" coffee crop estimated at.....
 tons, subject to a margin of 15 per cent either way, according to the crop outturn....

Price.—Rupees.....per.....

"*Triage*".—Limited to 7 per cent.

Delivery.—Between.....19.... and.....19....

The seller in fulfilment of this contract may from time to time during the contract period tender any portion of the contract quantity provided such portion be not less than and the buyer shall take delivery of such portion within seven days after the date on which the seller shall have given notice in writing that the produce is ready for delivery. In the event of the buyer failing to take delivery of any produce tendered under this contract within seven days from the date of tender, an extension of further seven days may be allowed, in which case the buyer shall pay interest on the amount due at the rate of 12 per cent per annum from the eighth day until date of payment or due date for delivery under resale. In the event of the buyer failing to take delivery within fourteen days from the date of tender, the seller shall resell the produce in auction on or before the seventeenth day from the date of tender notifying the buyer by the posting of notice of resale on the Curers' Association Notice Board, and in this case the buyer shall be liable for any loss occasioned by the resale, but shall not be entitled to the profit, if any. It shall not be incumbent upon the seller to disclose at the time of resale that the produce in question is offered for sale under default.

Should the seller fail to deliver the contract quantity in one or more tenders within the contract period, the buyer may at his option cancel the undelivered quantity, or purchase the same elsewhere at the current market rate of the day, and in the latter case, the buyer shall be entitled to recover from the seller any difference in excess of the contract price consequent on such purchase.

Payment.—Shall be on the basis of weight as ascertained on the date of payment, and shall be made in cash before delivery of the produce.

Acceptance.—No objection on the part of the buyer with regard to quality, or otherwise shall be entertained unless notice in writing shall have been given to the seller within four days from the date of tender.

Arbitration.—In the event of any dispute whatsoever, arising out of this contract, the matter shall be dealt with by arbitration conducted under Mangalore Arbitration Rules.

Force majeure.—The seller shall not be held responsible for any consequences of delay or non-fulfilment of contract, owing to *force majeure* such as war, revolution, strike, prohibition of export or import, blockade, destruction or damage of warehouse by fire, tempest, or earthquake, or any other cause beyond the control of the seller.

BUYER

SELLER

Mangalore,

Agents for.....Estate.

.....19 .

APPENDIX XXVII (b).

Produce Contract (Tellicherry).

.....have this day sold to/bought from

 tons of

Price.—Rupees.....

"Triage".—Limited to.....

Delivery.—.....

The seller in fulfilment of this contract may from time to time during the contract period tender any portion of the contract quantity and the buyer shall take delivery of such portion within seven days after the date on which the seller shall have given notice in writing that the produce is ready for delivery. In the event of the buyer failing to take delivery of any produce tendered under this contract within seven days from the date of tender an extension of further seven days may be allowed, in which case the buyer shall pay interest on the amount due at the rate of 12 per cent per annum from the eighth day until date of payment or due date for delivery under resale. In the event of the buyer failing to take delivery within fourteen days from the date of tender the seller shall resell the produce in auction on or before the seventeenth day from the date of tender notifying the buyer by the posting of notice of resale, and in this case the buyer shall be liable for any loss occasioned by the resale, but shall not be entitled to the profit, if any. It shall not be incumbent upon the seller to disclose at the time of resale that the produce in question is offered for sale under default.

Should the seller fail to deliver the contract quantity in one or more tenders within the contract period, the buyer may at his option cancel the undelivered quantity, or purchase the same elsewhere at the current market rate of the day, and in the latter case the buyer shall be entitled to recover from the seller any difference in excess of the contract price consequent on such purchase.

Payment.—Shall be on the basis of weight as ascertained on the date of payment and shall be made in cash before delivery of the produce.

Tellicherry,

.....19 ..

BUYER.

SELLER.

APPENDIX XXVII (c).

Coimbatore Coffee and Produce Contract.

..... have this day sold to/bought from.....
 tons of Estate
 "Plantation" coffee..... Estate "Plantation" coffee crop estimated at
 tons, subject to a margin of 15 per cent either way, according to the
 crop outturn.....

Price.—Rupees... .. per.....

"Triage".—Limited to 7 per cent.

Delivery.—Between 19 and.....19 .

The seller in fulfilment of this contract may from time to time during the contract period tender any portion of the contract quantity provided such portion be not less than and the buyer shall take delivery of such portion within seven days after the date on which the seller shall have given notice in writing that the produce is ready for delivery. In the event of the buyer failing to take delivery of any produce tendered under this contract within seven days from the date of tender, an extension of further six days may be allowed, in which case the buyer shall pay interest on the amount at the rate of 12 per cent per annum from the seventh day until date of payment or due date for delivery under resale. In the event of the buyer failing to take delivery within fourteen days from the date of tender, the seller shall resell the produce in auction on or before the twenty-first day from the date of tender notifying the buyer by the posting of notice of resale on the Seller's Notice Board, and in this case the buyer shall be liable for any loss occasioned by the resale, but shall not be entitled to the profit, if any. It shall not be incumbent upon the seller to disclose at the time of resale that the produce in question is offered for sale under default.

Should the seller fail to deliver the contract quantity in one or more tenders within the contract period, the buyer may at his option cancel the undelivered quantity, or purchase same elsewhere at the current market rate of the day, and in the latter case the buyer shall be entitled to recover from the seller any difference in excess of the contract price consequent on such purchase.

Payment.—Shall be on the basis of weight as ascertained on the date of payment, and shall be made in cash before delivery of the produce. In the case of produce railed by the seller on account of the buyer a 15 per cent deposit must be made and rail receipts will not be delivered until payment has been received as above or through a bank for the balance value *plus* charges.

Acceptance.—No objection on the part of the buyer with regard to quality, or otherwise shall be entertained unless notice in writing shall have been given to the seller within four days from the date of tender.

Arbitration.—In the event of any dispute whatsoever arising out of his contract the matter shall be dealt with by arbitration as posted on the Seller's Notice Board.

Force majeure.—The seller shall not be held responsible for any consequences of delay or non-fulfilment of contract, owing to *force majeure* such as war, revolution, strike, prohibition of export or import, blockade, destruction or damage of warehouse by fire, tempest, or earthquake, or any other cause beyond the control of the seller.

BUYER

SELLER

Agents for.....Estate.

Coimbatore,

.....19 .

APPENDIX XXVIII.

Mangalore Coffee and Produce Sale Terms.

(1) Produce will not be delivered until payment has been received. Cheques tendered will only be accepted subject to realisation before delivery of the produce.

(2) In the case of produce shipped or railed by the seller on account of the buyer shipping documents or rail receipt will not be delivered until payment has been received as above.

(3) Sale contracts for produce sold on forward delivery terms will be executed in the form and according to the conditions of the Mangalore Coffee and Produce Contract a specimen copy of which is attached hereto.

(4) In the case of produce sold on spot terms, either in auction or by private treaty, the following conditions shall apply :—

- (a) The buyer shall take delivery of the produce within seven days from the date of sale after which time the buyer can raise no objection. In the event of the buyer failing to take delivery within seven days from date of sale, an extension of further seven days may be allowed, in which case the buyer shall pay interest on the amount due at the rate of 12 per cent per annum from the eighth day until date of payment or due date for delivery under resale. In the event of the buyer failing to take delivery within fourteen days from date of sale, the seller shall resell the produce in auction on or before the seventeenth day from date of sale notifying the buyer by the posting of a notice of resale on the Mangalore Curers' Association Notice Board, and in this case the buyer shall be liable for any loss occasioned by the resale, but shall not be entitled to the profit, if any. It shall not be incumbent upon the seller to disclose at the time of resale that the produce in question is offered for sale under default.
- (b) Payment shall be on the basis of weight as ascertained on the date of payment.
- (c) In the event of any dispute, the matter shall be dealt with by arbitration conducted under Mangalore Arbitration Rules, and the award shall be accepted as final by both parties.
- (d) In the case of produce sold in auction the seller does not bind himself to accept the highest or any bid.

The following members of the Mangalore Curers' Association have entered into an agreement undertaking that no produce will be sold by them except on the above terms of sale.

Messrs. Aspinwall & Co., Ltd.

„ Peirce, Leslie & Co., Ltd.

„ A. J. Saldhana & Sons.

„ P. F. X. Saldhana & Sons.

„ Volkart Bros.' Agency.

„ Volkart Bros.' Curing Works.

Mangalore,
January 19 .

APPENDIX XXIX—*contd.*

CONDITIONS OF SALE.

(1) The buyer shall take delivery of the produce within seven days from the date of sale after which time the buyer can raise no objection. In the event of the buyer failing to take delivery within seven days from date of sale an extension of further seven days may be allowed, in which case the buyer shall pay interest on the amount due at the rate of 12 per cent per annum from the eighth day until date of payment or due date for delivery under resale. In the event of the buyer failing to take delivery within fourteen days from date of sale, the seller shall resell the produce in auction on or before the seventeenth day from date of sale notifying the buyer by the posting of a notice of resale on the Curers' Association Notice Board, and in this case the buyer shall be liable for any loss occasioned by the resale, but shall not be entitled to the profit, if any. It shall not be incumbent upon the seller to disclose at the time of resale that the produce in question is offered for sale under default.

(2) Payment shall be on the basis of weight as ascertained on the date of payment.

(3) Produce will not be delivered until payment has been received in cash.

(a) In the case of produce shipped or railed by the seller on account of the buyer shipping documents or rail receipt will not be delivered until payment has been received as above.

(4) The seller does not bind himself to accept the highest or any bid.

(5) In the event of any dispute, the matter shall be dealt with by arbitration conducted under Mangalore Arbitration Rules.

APPENDIX XXX.

Mangalore Arbitration Rules.

(1) Arbitration shall be conducted by two arbitrators, one nominated by the buyer and one by the seller.

(2) The party desiring arbitration shall give notice in writing to the other party by 4 P. M., and in consultation with the other party shall arrange for the arbitration to take place at the seller's godown within 48 hours.

(3) If either arbitrator fails to attend at the appointed time, the arbitration shall be proceeded with by the remaining arbitrator.

(4) In the event of the arbitrators being unable to agree they shall refer the matter to an umpire whose award shall be final.

(5) Arbitrators shall give their award forthwith in writing, furnishing copies to buyer and seller and a further copy to Messrs. Peirce, Leslie & Co., Ltd., and in the event of the matter being referred to an umpire, he shall observe the same procedure and give his award within 24 hours from the time of his appointment.

(6) If in the opinion of the arbitrators reconditioning cannot make the produce a fair tender, they shall award rejection of the tender.

(7) If in the opinion of the arbitrators reconditioning can make the produce a fair tender and can be completed within contract time, they shall award reconditioning.

(8) If in the opinion of the arbitrators reconditioning can make the produce a fair tender but cannot be completed within the contract time, they shall ask the buyer to choose between—

(a) the award of a cash allowance, and

(b) reconditioning during such extension of the contract time as arbitrators deem necessary for the purpose,

and on receiving buyer's reply, shall give their award accordingly.

(9) Arbitrators and umpires shall be paid the following fees by the loser in respect of each arbitration :—

(a) Arbitrators, Rs. 10 each, and umpire, if called in, Rs. 15, i.e., up to a maximum of Rs. 35 per arbitration.

(b) The required amounts shall be deposited in advance with the arbitrators and/or umpire, by buyer and seller, and on the conclusion of the arbitration the winner shall be repaid the amount so deposited by him.

Mangalore,

October 19

APPENDIX XXXI.

The Coimbatore Chamber of Commerce, Coimbatore.*Coffee Arbitration Panel.***RULES.**

(1) Arbitration shall be conducted by two arbitrators, one nominated by the buyer and one by the seller, to be selected by the list of approved arbitrators compiled by the Coimbatore Chamber of Commerce.

(2) The party desiring arbitration shall give notice in writing to the other party by 4 P.M., and in consultation with the other party shall arrange for the arbitration to take place at the seller's godown within 48 hours.

(3) If either arbitrator fails to attend at the appointed time, the arbitration shall be proceeded with by the remaining arbitrators.

(4) In the event of arbitrators being unable to agree they shall select an umpire to whom they shall refer the matter and whose award shall be final.

(5) Arbitrators shall give their award forthwith in writing, furnishing copies to buyer and seller and a further copy to the Honorary Secretary, Coimbatore Chamber of Commerce, and in the event of the matter being referred to an umpire, he shall observe the same procedure and give his award within 24 hours from the time of his appointment.

(6) If in the opinion of the arbitrators reconditioning cannot make the produce a fair tender, they shall award rejection of the tender.

(7) If in the opinion of the arbitrators reconditioning can make the produce a fair tender and can be completed within contract time, they shall award reconditioning.

(8) If in the opinion of the arbitrators reconditioning can make the produce a fair tender but cannot be completed within contract time, they shall ask the buyer to choose between—

(a) The award of a cash allowance,

(b) Reconditioning during such extension of the contract time as arbitrators deem necessary for the purpose, and on receiving buyer's reply, shall give their award accordingly.

(9) The Chamber, arbitrators and umpire shall be paid the following fees by the loser in respect of each arbitration :—

(a) Chamber . . . Rs. 10 per arbitration,

Arbitrators . . . Rs. 10 each,

and umpire, if called in, Rs. 15.

i.e., up to a maximum of Rs. 45 per arbitration.

(b) The required amounts shall be deposited in advance with the Chamber of Commerce, by buyer and seller, and on the conclusion of the arbitration the winner shall be repaid the amount so deposited by him.

(10) Samples of the coffee under dispute shall be drawn by the arbitrators in the seller's godown *in the presence of buyer and seller*, and buyer and seller shall be given the opportunity of being present.

(11) Documents in connection with the contract under dispute shall be submitted to the arbitrators 24 hours prior to the holding of the arbitration.

*Hony. Secretary,
Coimbatore Chamber of Commerce.*

APPENDIX XXXII.
Results of analysis of ground coffee.

	Results of mechanical analysis.* (Mesh percentage by weight).				Total nitro- gen.	Percent- age ash.	Percent- total acidity (No. of c.c. of normal HCl).	Percent- age of total fat.	Percent- age of chicory and other adulter- ants (by sp. gr. me- thod).	Colour of liquors (optical me- thod).	Qualitative tests for the presence of sugar.
	Stand on 20 meshes per inch.	Stand on 40 meshes per inch.	Stand on 60 meshes per inch.	Stand on 80 meshes per inch.							
<i>Pure coffee.</i>											
1. Very fine—											
Average .	50.9	37.9	8.5	2.05	2.32	4.25	22.47	13.46	0	2.8	0.6
Maximum .	76.5	61.0	13.5	4.5	2.63	5.38	25.00	18.79	0	3.0	1.5
Minimum .	19.5	17.5	4.5	0.0	2.16	3.60	19.91	6.78	0	2.0	0.0
2. Fine—											
Average .	39.6	44.75	11.2	3.6	2.31	3.79	20.29	11.08	0	2.7	0.2
Maximum .	75.0	80.0	32.0	12.0	2.40	4.23	27.57	14.93	0	3.0	0.5
Minimum .	6.0	17.5	4.0	0.0	2.23	2.30	16.50	7.45	0	2.0	0.0
3. Fine/Good—											
Average .	17.06	59.3	19.5	3.3	2.47	3.92	18.98	13.32	0	1.8	0.7
Maximum .	69.0	83.0	34.1	11.0	2.60	5.25	23.14	17.29	0	3.0	1.0
Minimum .	0.0	23.0	6.0	0.0	2.23	3.14	15.41	5.37	0	1.0	0.5
4. Good —											
Average .	7.3	80.3	10.3	1.1	2.51	4.40	16.60	14.77	0	2.1	0.6
Maximum .	14.0	83.0	16.5	3.0	2.70	4.70	18.79	16.40	0	3.0	1.0
Minimum .	1.0	72.5	2.5	0.0	2.42	4.04	15.15	13.14	0	1.5	0.5
5. Fair—											
Average .	17.0	60.8	17.7	3.3	2.39	4.00	12.87	15.19	0	2.0	1.0
Maximum .	50.0	83.0	36.0	6.5	2.59	4.63	12.87	15.19	0	3.0	1.0
Minimum .	0.0	31.5	6.0	0.0	2.06	3.67	12.87	15.19	0	1.0	1.0

*There is a small percentage of loss in sieving in each case.

APPENDIX XXII—contd.
Results of analysis of ground coffee—contd.

	Results of mechanical analysis.* (Mesh percentage by weight).					Total nitro- gen.	Percent- age of ash.	Percent- age of total acidity (No. of c.c. of normal HCl).	Percent- age of total fat.	Percent- age of chicory and other adulterants (by sp. me- gr. me- thod).	Colour of liquors (optical me- thod.)	Qualita- tive tests for the presence of sugar.
	Stand on 20 meshes per inch.	Stand on 40 meshes per inch.	Stand on 60 meshes per inch.	Stand on 80 meshes per inch.	Stand on 100 meshes per inch.							
<i>Coffee containing 50 per cent chicory or less.</i>												
1. Good—						%	%	c.c.	%	%	Points.	Points.
Average . . .	13.4	46.0	24.6	14.2	3.75	1.99	4.99	22.16	8.18	31.54	0.6	0.9
Maximum . . .	34.5	55.0	36.0	28.75	3.75	2.47	6.19	25.49	10.92	46.50	1.0	2.0
Minimum . . .	1.5	37.5	12.75	5.5	3.75	1.69	4.19	19.23	5.13	22.50	0.0	0.0
2. Fair—												
Average . . .	7.3	48.1	27.6	15.7	..	1.85	4.93	22.09	8.68	23.67	0.5	0.8
Maximum . . .	14.0	55.0	37.0	25.0	..	2.52	5.95	25.43	10.86	34.00	2.0	1.5
Minimum . . .	1.0	41.0	17.0	1.5	..	0.99	4.02	16.53	6.50	6.00	0.0	0.0
3. Poor—												
Average . . .	1.9	60.2	30.0	6.7	..	2.14	5.89	18.32	13.48	31.40	0.6	1.0
Maximum . . .	7.0	88.0	37.0	17.0	..	2.75	7.51	21.57	16.40	40.00	1.0	1.5
Minimum . . .	0.0	37.0	11.0	0.0	..	1.29	5.00	16.50	10.19	17.00	0.0	0.5

*There is a small percentage of loss in sieving in each case.

APPENDIX XXXII—*contd.*
Results of analysis of ground coffee (contd.)

Results of mechanical analysis.* (Mesh percentage by weight).															
	Stand on 20 meshes per inch.					Stand on 40 meshes per inch.	Stand on 60 meshes per inch.	Stand on 80 meshes per inch.	Stand on 100 meshes per inch.	Total nitrogen.	Percent- age of ash.	Percent- age of total acidity (No. of c.c. of normal HCl).	Percent- age of chicory and other adulter- ants (by sp. me- thod).	Colour of liquors (optical me- thod.)	Qualita- tive tests for the presence of sugar
	Stand on 20 meshes per inch.	Stand on 40 meshes per inch.	Stand on 60 meshes per inch.	Stand on 80 meshes per inch.	Stand on 100 meshes per inch.										
<i>Coffee containing over 50 per cent chicory.</i>										%	c.c.	%	%	Points.	Points.
	1. Good—														
	Average	0.0	47.0	31.5	20.0	2.0	1.24	8.01	28.53	8.13	83.20	0.5	1.7		
	Maximum	0.0	54.5	33.0	28.0	2.0	1.44	9.50	30.07	9.23	98.20	1.0	2.5		
	Minimum	0.0	39.5	30.0	12.0	2.0	1.03	6.52	26.98	7.02	68.20	0.0	1.0		
2. Fair—															
	Average	8.0	43.5	27.0	19.8	1.25	1.38	6.15	18.49	8.93	68.30	0.8	1.1		
	Maximum	23.0	45.0	33.0	31.0	1.5	1.60	8.82	25.37	9.96	92.00	2.0	2.0		
	Minimum	1.0	40.0	22.5	9.0	1.0	1.02	4.75	3.14	9.89	55.20	0.0	0.0		
3. Poor—															
	Average	9.1	45.1	22.8	21.1	2.3	1.21	6.53	23.96	6.55	77.20	0.7	1.2		
	Maximum	36.0	51.0	40.5	44.0	5.0	1.44	10.25	30.18	8.31	91.30	2.0	3.0		
	Minimum	0.0	23.0	1.0	0.0	1.0	0.87	4.14	13.02	5.24	64.85	0.0	0.0		

* There is a small percentage of loss in sieving in each case.

APPENDIX XXXII—*contd.*
Results of analysis of ground coffee—contd.

	Results of mechanical analysis,* (Mesh percentage by weight).					Total nitro- gen.	Percent- age of ash.	Percent- age of total acidity (No. of c.c. of normal HCl).	Percent- age of cholesterol and other a-linole- nates. (by sp. gr. me- thod).	Colour of liquors (optical me- thod.)	Qualitative tests for the presence of sugar.
	Stand on 20 meshes per inch.	Stand on 40 meshes per inch.	Stand on 60 meshes per inch.	Stand on 80 meshes per inch.	Stand on 100 meshes per inch.						
<i>Coffee containing other adulterants (which may also contain chloory).</i> 1. Fine—	1.5	72.0	16.0	9.0	..	2.66	4.9	27.05	13.4	6.10	0 ..
	1.5	72.0	16.0	9.0	..	2.66	4.9	27.05	13.4	6.10	0 ..
	1.5	72.0	16.0	9.0	..	2.66	4.9	27.05	13.4	6.10	0 ..
2. Fine/Good—	2.0	79.2	15.0	2.2	..	2.60	7.39	17.37	10.15	23.93	1 1.25
	4.0	96.0	27.0	4.5	..	2.62	10.27	19.65	12.20	40	1 2
	0.0	62.5	3.0	0.0	..	2.58	4.52	15.09	8.09	7.87	1 0.5
3. Good—	6.9	71.3	15.5	5.5	..	2.34	4.53	20.23	10.98	6.71	2.3 0.8
	24.0	89.5	27.5	9.5	..	2.84	6.48	26.98	14.098	10.50	3.0 1.5
	0.0	55.0	7.0	0.0	..	1.75	3.13	17.48	7.87	2.70	1.5 0.0

4. Fair—												
Average	3.1	67.9	20.1	6.8	9.0	2.36	4.72	19.82	13.13	14.72	1.6	0.6
Maximum	8.0	83.5	30.0	22.5	9.0	2.78	7.23	29.43	18.98	52.85	3.0	1.5
Minimum	0.0	44.0	11.0	2.0	9.0	1.50	3.72	14.03	7.03	1.30	0.0	0.0
5. Poor—												
Average	2.6	65.8	19.5	10.7	1.63	2.85	5.27	18.42	10.18	39.90	1.2	1.0
Maximum	6.09	88.0	33.0	49.25	2.50	6.10	6.78	27.35	16.31	100.00	3.0	2.0
Minimum	0.0	25.25	6.0	0.0	0.75	2.07	3.42	12.22	1.46	3.80	0.0	0.0

* There is a small percentage of loss in sieving in each case.

APPENDIX XXXIII.

Results of analysis of commercial samples of roasted beans.

No. 1 size.

—	Over 8 mm.	Over 7·8 mm.	Over 6·7 mm.	“ Pb.”	“ Triage.”	Weight of 1,000 beans in grammes.
	82	17	0·5	<i>Nil</i>	0·5	162·9
	85	14	<i>Nil</i>	1	<i>Nil</i>	144·9
	63	30	1	<i>Nil</i>	6	143·8
	54·6	36·6	2·0	4·0	2·8	139·3
	53	41	5	<i>Nil</i>	1	157·7
Average . .	67·5	27·7	1·7	1·0	2·1	149·7
Maximum . .	85	14	<i>Nil</i>	1	<i>Nil</i>	162·9
Minimum . .	53	41	5	<i>Nil</i>	1	139·3

APPENDIX XXXIII—*contd.*

No. 2 size.

	Over 8 mm.	Over 7·8 mm.	Over 6·7 mm.	"Pb".	"Triage".	Weight of 1,000 beans in grammes.
	(Composition percentage.)					
	42·5	42·5	5·0	3·4	6·6	126·1
	24	71·3	2	0·3	2·4	130·2
	16	67	13	1	3	119·5
	<i>Nil</i>	45	49	3	3	125·8
	16	67	13	2	2	119·5
	20	79	<i>Nil</i>	<i>Nil</i>	1	163·1
	23	66	7	1	2	125·0
	43·3	45·2	7·0	2·1	2·4	115·0
	34	54·8	1·9	0·4	8·0	113·0
	16	36	16	9	22	132·1
	31	33	10	5	21	124·6
	41·3	36·6	4·7	13·4	4·0	125·8
	47·3	35·3	4·9	2·7	9·8	132·9
	28·9	53·9	10·8	2·1	4·3	111·5
	30·8	43·8	4·1	13·8	7·5	120·3
	0·3	51·3	25·2	2·6	20·6	124·9
	26	55	8	7	4	125·3
	23	54	6	9	8	124·2
	48·8	33·3	1·5	6·7	9·7	133·6
Average . .	27·0	51·1	10·0	4·4	7·5	125·9
Maximum . .	47·3	79	49	13·8	22	163·1
Minimum . .	0·3	33	1·5	0·3	1	111·5

APPENDIX XXXIII—*contd.*

No. 3 size.

	Over 8 mm.	Over 7·8 mm.	Over 6·7 mm.	"Pb".	"Triage".	Weight of 1,000 beans in grammes.
	21	56	8	9	6	132·6
	14	77	9	<i>Nil</i>	<i>Nil</i>	125·8
	21	56	8	9	6	132·0
	14	79	5	1	2	113·4
	18	38	10	3	31	131·3
	27	30	14	1	27	124·3
	56	23	3	9	9	113·4
	1·9	61·8	28·5	6·8	1·0	99·8
	24·3	44·8	3·4	10·1	17·4	116·4
	32·3	30·3	1·6	2·3	33·5	124·1
	30·7	43·8	3·5	4·6	17·4	130·8
	22·6	52·5	11·8	6·2	6·9	121·0
Average . .	23·5	49·4	8·8	5·2	13·1	122·1
Maximum . .	56	79	28·5	10·1	33·5	132·6
Minimum . .	1·9	23	1·6	<i>Nil</i>	1·0	99·8

APPENDIX XXXIII—*conold.*

"Peaberry".

	"Pb."	"Flats."	"Triage."
	98·7	0·9	0·4
	75	25	<i>Nil</i>
	99	1	<i>Nil</i>
	99	1	<i>Nil</i>
	98	1·5	0·5
	99	0·5	0·5
	90	5	5
	99	0·1	<i>Nil</i>
	97	<i>Nil</i>	1
	98·4	<i>Nil</i>	1·6
	99·7	0·3	<i>Nil</i>
	100	<i>Nil</i>	<i>Nil</i>
	100	<i>Nil</i>	<i>Nil</i>
Average . .	96·5	2·8	0·7
Maximum . .	100	25	5
Minimum . .	75	<i>Nil</i>	<i>Nil</i>

APPENDIX XXXIV.

Results of analysis of commercial samples of raw beans according to size.

(Size of gauges.)

(In millimetre.)

—	7 mm. "A" or "O"	6 mm. "B"	5 mm. "C"	Below 5 mm. Below "C"	"Pb."	"Triage."
	(Percentage of composition.)					
<i>Parchment "A."</i>						
<i>Nilgiris—</i>						
Average . .	58·01	39·42	0·88	0·15	0·68	0·86
Maximum . .	98·5	79·3	3·4	0·6	1·4	3·2
Minimum . .	18·9	0·3	0·2	0·6	0·2	0·2
<i>Shevaroy—</i>						
Average . .	43·47	51·92	0·58	<i>Nil</i>	0·38	1·65
Maximum . .	60·1	59·5	1·2	<i>Nil</i>	0·9	2·6
Minimum . .	38·5	37·9	0·2	<i>Nil</i>	0·1	0·1
<i>Mysore—</i>						
Average . .	85·9	13·3	<i>Nil</i>	<i>Nil</i>	<i>Nil</i>	0·8
Maximum . .	85·9	13·3	<i>Nil</i>	<i>Nil</i>	<i>Nil</i>	8·8
Minimum . .	85·9	13·3	<i>Nil</i>	<i>Nil</i>	<i>Nil</i>	8·8
<i>Coorg—</i>						
Average . .	67·45	31·4	0·35	<i>Nil</i>	0·5	0·3
Maximum . .	68·5	32·4	0·4	<i>Nil</i>	0·8	0·6
Minimum . .	66·4	30·4	0·3	<i>Nil</i>	0·2	0·6

APPENDIX XXXIV—*contd.*

	7 mm. "A" or "O"	6 mm. "B"	5 mm. "C"	Below 5 mm. Below "C"	"Pb."	"Triage."
	(Percentage of composition.)					
High Range—						
Average . . .	3.02	82.88	7.68	0.73	5.23	0.46
Maximum . . .	6.05	83.06	15.1	1.4	10.36	0.7
Minimum . . .	<i>Nil</i>	82.7	0.25	0.05	0.1	0.23
Chikmagalur—						
Average . . .	57.28	42.0	0.17	<i>Nil</i>	0.30	0.25
Maximum . . .	75.3	50.0	0.5	<i>Nil</i>	0.6	0.6
Minimum . . .	48.8	23.9	0.17	<i>Nil</i>	0.1	0.1
Palni—						
Average . . .	28.3	55.2	7.03	1.93	2.27	5.27
Maximum . . .	37.2	59.9	11.0	2.4	6.0	6.3
Minimum . . .	21.8	46.6	4.1	1.5	0.4	5.3
Cherry-dried.						
Average . . .	34.04	51.08	5.18	1.55	3.55	4.60
Maximum . . .	65.6	62.9	7.0	2.4	6.6	7.9
Minimum . . .	23.3	28.1	0.7	0.2	<i>Nil</i>	2.0
Robusta.						
Average . . .	8.8	42.39	17.87	13.23	1.99	55.72
Maximum . . .	16.7	70.0	26.6	34.3	7.4	82.8
Minimum . . .	0.7	7.9	1.4	0.9	0.6	0.8
Parchment "B"						
Average . . .	4.87	83.64	6.26	0.93	1.38	2.92
Maximum . . .	8.9	95.9	34.4	4.4	10.36	9.3
Minimum . . .	<i>Nil</i>	52.5	0.1	<i>Nil</i>	0.1	0.23

APPENDIX XXXV.

Grade specifications for arabica "Plantation" coffee.

Grade designations.	Definition of quality.				General characteristics.	
	Special characteristics.		Dressing/Garbling.	Blemish.		Colouring and polishing.
	Size *	Tolerance in regard to size.				
1	At least 70% by weight shall stand on a 7.0 mm. sieve.	Not more than 1.5% shall pass through a 6.50 mm. sieve.	4	5	6	
MARK "O"	At least 70% by weight shall stand on a 7.0 mm. sieve.	Not more than 1.5% shall pass through a 6.50 mm. sieve.	Shall be dressed by removing "Peaberry" and excessively large beans ("Elephants") and beans corresponding with "A", "B" and "C" grades from the natural assortment of the beans as grown.	Shall be free from "Blacks and Bits", and "Triage", subject to a maximum combined tolerance of 5% by weight, and a maximum tolerance of 3% by weight in respect of any one defect, viz.: (a) pale, (b) foxy, (c) broken, (d) spotted, (e) withered, "Elephants", or (f) otherwise defective beans.	The beans shall not be artificially polished and shall be free from added colouring matter.	
MARK "A"	At least 70% by weight shall stand on a 6.65 mm. sieve.	Not more than 1.5% shall pass through a 6.00 mm. sieve.	Shall be dressed as for "O" grade. The removal from the natural assortment of beans pertaining to "O" grade is not permissible. If less than 25% of the beans fail to stand on a 7 mm. sieve it shall be presumed that the beans have not been properly dressed.	The maximum tolerance for "Blacks and Bits" shall be 0.5% by weight. In the case of "Peaberry" the presence of "Flats" shall be treated as blemish and be subject to		

				the foregoing provisions in regard to tolerance.
CUMBATORE "A"	At least 70% by weight shall stand on a 6.50 mm. sieve.	Not more than 1.5% shall pass through a 6.00 mm. sieve.	Same as for AGMARK "A."	
AGMARK "B"	At least 60% by weight shall stand on a 6.00 mm. sieve.	Not more than 2% shall pass through a 5.50 mm. sieve.	Shall be dressed out of the natural assortment by the removal of any other grades.	
AGMARK "C"	Anything smaller than "B" grade.		As for "B" grade.	
AGMARK "PEA-BERRY."			As for "B" grade.	

* Sieves used to determine size shall be not more than 1/16" thick and shall be flat having round holes of the diameters specified with clean sharp edges spaced at between 7 mm. and 12 mm. centres.

† "Peaberry" shall consist of single seeded round or elliptical beans.

‡ "Blacks and Bits" shall include beans of which three-fourths or more of the surface is black and also any broken pieces which are half the size of a bean or less.

§ "Triage" consists of pale, foxy, broken, spotted, withered "Elephants" and otherwise defective beans.

¶ "Flats" are the normal twin seeded beans which are flat on one side.

APPENDIX XXXVI.

Grade specifications for roasted beans.

Grade designations.	Definition of quality.	
	Special characteristics.	General characteristics.
	Grade of coffee* from which the roast coffee shall be prepared.	
1	2	3
Extra large "Flats" . . .	AGMARK "O" . . .	All the beans shall be roasted to the same degree of colour† and packed in fresh conditions after roasting.
Large "Flats" . . .	AGMARK "A" or COIMBATORE "A."	
Small "Flats" . . .	AGMARK "B" or AGMARK "C"	
AGMARK "Peaberry" . . .	AGMARK "Peaberry" . . .	

* As prescribed by the Agricultural Produce (Grading and Marking) (Coffee) Rules 1939.

† The description "Light roast" or "Dark roast" may be applied along with the grade designation to roast coffee of a brown or very dark brown colour respectively.

APPENDIX XXXVII.

Grade specifications for pure arabica ground coffee in packages.

Grade designations.	Definition of quality.					General characteristics.
	Special characteristics.					
	Minimum quantity standing on a sieve having :		Maximum quantity passing through a sieve having 60 meshes per linear inch (per cent).	Total acidity*.		
	20 meshes per linear inch (per cent).	40 meshes per linear inch (per cent).				
1	2	3	4	5	6	
Special	40	80	Nil	20	No appreciable quantity shall pass through a sieve having 80 meshes per linear inch. The ground coffee shall be the product of roasted <i>arabica</i> coffee beans only containing no added husk or other substances and shall be in sound dry† free condition with no rancid or other obnoxious flavour. The nitrogen content shall not be less than 2 or more than 2.75 per cent. The ash content shall be between 3 and 5 per cent and the ash shall be feathery, bluish white in colour and entirely soluble in dilute hydrochloric acid.	
Coarse ground	..	80	2	17.5		
Fine ground	..	60	5	15		

* Total acidity in 100 grammes of ground coffee in terms of the equivalent volume (cubic centimetres) of normal hydrochloric acid.

† Moisture content shall not exceed one per cent.

(1) The mesh shall be measured between the wires.

(2) *Method of packing* :—The tins to be exhausted under vacuum and CO₂ inserted.

APPENDIX XXXVIII.

Trade (rail and river-borne) in coffee between different provinces and Indian States and chief ports in India.
(Average 1933-34 to 1937-38.)
(In maunds.)

Exported from	Imported into																	Total.		
	Assam.	Bengal.	Bihar and Orissa.	United Provinces.	Punjab.	Sind and British Baluchistan.	Central Provinces.	Bombay.	Madras.	Rajputana.	Central India.	Nizam's Dominions.	Mysore.	Kashmir.	Calcutta.	Bombay Port.	Karachi.		Madras Port.	
Assam	2																			256
Bengal		34	20	9				4												12
Bihar and Orissa		1	3	1					2											18
United Provinces		1			7				1											31
Punjab					14				4											144
Sind and British Baluchistan																				
Central Provinces																				
Bombay								125	11											4
Madras								30	30											176
Rajputana								192												6
Central India								23												172
Nizam's Dominions								1												76,453
Mysore								2	2											2
Kashmir								1												18
Calcutta								1,063	6,351											8,978
Bombay Port								35												2
Karachi								11	51											1
Madras Port								4	85											3
Total	28	342	625	939	2,249	157	747	4,616	76,066	130	136	2,776	7,139	6	1,292	3,960	26	76,170	177,304	

APPENDIX XXXIX.

Special railway freight rates (O. R.) per maund.*

From	To	Station to station rate.	Class rate.
		Rs. A. P.	Rs. A. P.
Mangalore . . .	Ernakulam	0 3 7	0 14 3
Mangalore . . .	Tellicherry	0 2 6	0 4 11
Mangalore . . .	Madras (via Jalarpet)	0 13 6	1 7 4
Tellicherry . . .	Ernakulam	0 3 0	0 12 3
Tellicherry . . .	Mangalore	0 2 6	0 4 11
Birur	Mangalore (via Jalarpet)	0 13 11	1 11 10
* Birur	Mysore (via Arsikere)	0 4 2	0 6 9
Birur	Mangalore (via Mormugoa)	0 13 11	0 15 8†
Kadur	Mangalore (via Jalarpet)	0 13 11	1 1 2
Kadur	Mangalore (via Mormugoa)	0 13 11	0 15 10†
* Kadur	Mysore (via Arsikere)	0 4 1	0 6 7
Chikmagalur O. A. .	Mangalore (via Mormugoa)	1 1 11	0 15 10‡
* Tarikere	Mysore (via Birur and Arsikere)	0 4 8	0 7 7
Mysore	Mormugoa Harbour (via Arsikere)	0 12 5	1 6 6
Mysore	Madras (via Bangalore)	0 13 6	0 15 11
Mysore	Bombay (via Arsikere and Poona)	1 4 4	2 6 6
Mysore	Bombay (via Arsikere and Mormugoa)	1 1 3	1 6 6†
* Mysore	Kadur	0 4 1	0 6 7
† Mysore	Kadur	0 5 4	0 6 7
Krishnarajanagar .	Madras (via Bangalore)	0 14 6	1 1 1
Krishnarajanagar .	Mangalore (via Mormugoa)	1 0 1	1 5 4†
Krishnarajanagar .	Bombay (via Arsikere and Poona)	1 3 8	2 5 0
Krishnarajanagar .	Bombay (via Harihar and Mormugoa Hr.)	1 0 8	1 5 4†
Krishnarajanagar .	Kadur	0 4 1	0 5 5
Madras	Shalaimar (via Waltair)	1 1 0	3 5 3
Jalarpet	Poona	2 2 8	2 4 11
Bombay	Madras (via Raichur)	1 3 1	2 9 0
Belagula	Bombay (via Harihar and Poona)	1 4 4	2 9 0
Belagula	Bombay (via Harihar and Mormugoa Hr.)	1 1 3	1 6 1†
Belagula	Madras (via Bangalore City)	0 13 6	1 0 3
Belagula	Mormugoa Hr. (via Harihar)	0 12 5	1 6 2
Save	Mangalore (via Harihar and Mormugoa Hr.)	1 1 9	1 1 11†
* Save	Mysore	0 7 8	0 9 1
* Channarajanagar .	Mysore	0 1 5	0 2 0
* Hassan	Mysore	0 2 4	0 3 10
* Tadasa	Mysore	0 7 3	0 8 9
Kollengode	Coimbatore	0 3 0	0 3 10

* Applies to " Parchment " and " Cherry " coffee in shells.

† Applies to clean coffee.

‡ Railway freight only.

§ Railway freight only—from Kadur.

¶ of 82 2/7 lb.

APPENDIX XL.

Monthly average coastal import and export trade in coffee and coffee products of the maritime Indian provinces.

(1933-34 to 1937-38.)

(In cwt.)

	Bengal.		Bombay.		Sind.		Madras.	
	Im- port.	Ex- port.	Im- port.	Ex- port.	Im- port.	Ex- port.	Im- port.	Ex- port.
December .	113	30	400	20	27	..	56	455
January .	85	10	589	29	23	..	114	759
February .	108	16	782	14	20	1.4	1,043	1,315
March .	120	15	699	13	16	..	1,337	1,175
April .	178	50	1,563	20	18	..	112	2,547
May .	58	3	2,410	18	16	..	225	2,600
June .	52	38	128	26	19	..	39	1,061
July .	25	6	80	11	5	..	113	316
August .	17	4	81	26	11	0.4	47	246
September .	42	7	209	15	15	..	79	300
October .	35	1	316	21	18	..	45	433
November .	43	6	334	22	28	..	37	529
Total .	876	186	7,591	235	216	1.8	3,247	11,736

APPENDIX XLI.

Coastal shipping freights before the War.

From	To	Freight per cwt.
		Rs. A. P.
Mangalore	Madras	1 9 9
"	Tuticorin	1 13 2
"	Karachi	1 4 5
"	Bombay	0 13 7
"	Kumta	0 9 1
"	Tadri	0 9 1
"	Karwar	0 9 1
"	Marmugoa	0 9 1
"	Veerawal	1 4 5
"	Mangrol	1 4 5
"	Porbandar	1 4 5
"	C. Mandvi	1 4 5
"	Bedi Bunder	1 4 5
"	Kundla	1 4 5
"	Navlakhi	1 4 5
"	Bhavnagar	1 4 5
Madras	Calcutta	0 9 9
Malabar ports	Calcutta	0 14 5
Burma	Calcutta	0 14 5
Bombay	Calcutta	0 10 10*
Cochin	Bombay	0 13 5
Madras	Rangoon	1 13 7

* Less 10 per cent rebate.

APPENDIX XLII.

RULES OF THE COFFEE TRADE ASSOCIATION, LONDON.

General regulations relating to the constitution of the Coffee Trade Association of London.

The committee appointed to prepare rules for the formation of an association presented the following for the consideration of the wholesale coffee trade of London, at a meeting convened for that purpose on Wednesday, the 19th July 1916.

These rules were approved and adopted.

1. The association shall be called "The Coffee Trade Association of London", and is hereafter referred to as "the Association". It shall consist of such firms and corporations dealing in coffee as shall have become elected members and thereupon have subscribed to the constitution and rules in force at date of admission, or any subsequent additions or alterations thereto.

2. (a) The objects of the Association are to promote the best interests of the London coffee trade as a whole for the mutual benefit of all concerned, merchants, importers, exporters, brokers and wholesale dealers, and to facilitate the settlement of disputes in the trade by arbitration or otherwise, and for these purposes to make rules for the proper supervision and efficient conduct of the trade, including the regulation of mutual transactions between members of the association. The formation of such rules shall be entrusted to the committee, and when made, shall be binding on the members without prejudice to the rights conferred under Clause 11.

(b) The association shall be formed of traders who shall be registered in the membership list either as brokers or merchants, the latter term to comprise importers, exporters, agents and wholesale dealers.

3. Applications for admission to membership of the association shall be made in writing to the Secretary, who shall submit same to the committee, and a majority of three-fourths of those present shall be necessary for the election of any applicant for membership.

Every member of the association shall conform to and be bound by the Regulations and Rules of the Association for the time being in force, and shall on signing (or in the case of corporations, sealing) these regulations, be deemed to have entered into a covenant to that effect with each and every other member for the time being of the association.

4. Each member (or firm) shall pay to the association an entrance fee of one guinea and an annual subscription of one guinea, the year to be reckoned as from 1st July to 30th June.

5. All members elected shall immediately on election pay to the association the entrance fee and annual subscription for the then current year, and shall also pay such further annual subscriptions as may be decided from time to time.

Any member who shall fail to pay his annual subscription within one month after receipt of notice from the Secretary shall cease to be a member of the association; but may be re-elected on payment of a further entrance fee.

6. The general management of the affairs of the association shall be entrusted to a committee of 13 persons, of whom

3 shall be selling brokers.

3 shall be buying brokers.

3 shall be merchants.

3 shall be wholesale dealers and a Chairman.

(a) The first committee shall consist of the following :

Messrs. W. Brockmann, Robt. Browne, and C. Ernest Woodhouse, Selling Brokers.

Messrs. S. L. Asser, A. Miller and W. A. Nightingale, Buying Brokers.

Messrs. E. O. Broad, F. T. Lydall and A. De Weck, Merchants.

Messrs. A. S. Booth, B. B. Keable, and Alex. J. Parnell, Wholesale Dealers.

Mr. Andrew Devitt, Chairman and five members, including a Chairman, shall form a quorum.

(b) Four members of the committee, one of each section, shall retire annually in rotation, but shall be eligible for re-election, and in the event of a vacancy on the committee occurring during any one year, the committee shall have power to co-opt a member of the

APPENDIX XLII—*contd.*

association to fill the vacant post, provided the member comes under the same section of the trade as his predecessor.

The Chairman shall hold office for a period of one year, and be eligible for re-election.

(c) The committee shall meet together for the dispatch of business, adjourn and otherwise regulate their meetings in such manner as they consider desirable. In the event of the Chairman being unable to attend any meeting of the committee, the members present shall select one of their number to preside at such meeting.

7. The committee shall be vested with powers to act as an official body representing the trade, in deputations or solicitations in government or other quarters when the interests of the trade are involved, or as occasion may arise.

8. The following shall be the terms and conditions applying to sales of coffee :

(i) The selling brokers may at their discretion refuse to recognise the bid, or to accept the name of any one desiring to purchase at this sale.

(ii) Subject to the previous condition, the highest bidder to be the purchaser, but the vendor reserves the right to bid by himself or his agent, or to alter, vary, or withdraw any lot or lots before or during the sale. Should any dispute arise during the course of bidding at the sale the same shall be decided by the showing of hands, or be left to the decision of the selling broker.

(iii) Brokers or agents purchasing at this sale must declare their principals (to be approved by the selling brokers) immediately after the sale, or be held responsible for the fulfilment of the contract.

(iv) Prompt as printed : payment for the coffee to be made as follows : A deposit to be paid to the selling broker on the Tuesday following the day of sale on all purchases for which the weight notes have been delivered to the buyer on or before the preceding Friday. The deposit to be 20 per cent on the selling price of coffee, the same to be reckoned in even poundage, and the balance by cash on the prompt day or on delivery of the warrants ; interest at the rate of 5 per cent per annum being allowed on all payments made before the prompt for the unexpired term.

(v) For all coffees (excepting those sold on quay terms) one warrant and one weight note to be made out for each lot.

(vi) For all coffees sold on quay terms, one warrant and one weight note to be made out for each lot, but if the lot exceeds 40 bags, buyer to have the option of separate warrants and weight notes for each 40 bags. The delivery of the warrants (or other documents of title to the coffee) by selling brokers to the buyer on payment of the purchase money shall be deemed to be delivery of the coffee to the buyer.

(vii) The goods to be ready for delivery on the morning after the day of sale; the buyer to have the option of cancelling his purchase of any lot or lots for which he cannot obtain the warrants and weight notes on the second morning after the day of sale ; an immediate written declaration that the contract is rescinded to be given to the selling brokers.

(viii) The goods to be taken at warrant weights, with customary allowances as they lie in the warehouse (the damaged portion with all faults) where they may be inspected previous to the sale ; any objection as to quality or description will not be admitted or entertained unless made within ten days of the day of sale.

(ix) In case of loss from fire and/or acts and operations of war previous to prompt day delivery of warrants, or day of payment, whichever may first happen, the contract for such portion of the goods to be void, and the deposit to be returned, *plus* interest.

(x) Lot money 6d. per lot of the value of £5 or over on all purchases within the prompt.

(xi) In the event of non-fulfilment of any of the conditions, the goods to be re-sold by public or private sale, and the loss (if any) as well as all charges incurred, to be made good by the defaulter.

(xii) Any dispute arising out of a contract made under these conditions is to be settled by arbitration in the usual manner by London Coffee Brokers who are members of the Coffee Trade Association of London. Such submission to arbitration shall be final, and may be made a Rule of His Majesty's High Court of Justice, or any division thereof on the application of either party.

APPENDIX XLII—*concl'd.*

(xiii) The "usual manner" referred to in the previous paragraph shall be constituted as follows:

Each disputant shall appoint (in writing) as arbitrator a recognised coffee broker and member of the association. No broker shall act as arbitrator in a case where he is interested in the subject matter of dispute without the consent (in writing) of the parties to the dispute.

If one disputant shall neglect to appoint an arbitrator within fourteen days after notice in writing received from the other disputant of the appointment made by him, the Chairman of the association shall appoint the other arbitrator. A fee of £1 1s. in respect of such appointment to be paid to the association by the party to the dispute who shall apply for such appointment to be made.

Such arbitrators shall, before entering on the arbitration, appoint an umpire (also a coffee broker and member of this association) and in the event of the arbitrators being unable to agree upon an award they shall refer the dispute to the umpire. If the arbitrators shall neglect to appoint an umpire within seven days from their appointment, the Chairman of the association (at the request of either arbitrator) shall appoint same.

The arbitrators and umpire shall have power to obtain, call for, receive and act upon any such oral or documentary evidence or information (whether the same be strictly admissible as evidence or not) and to conduct the arbitration in such manner in all respects as they or he may think fit.

The award of such arbitrators or umpire (as the case may be) shall be final and binding on all parties.

All awards must be signed by the arbitrators or umpire in their own names.

Public sale catalogues containing the clause "Conditions of Sale as per the rules of the Coffee Trade Association of London" shall be deemed to have been issued subject to the above named Rule 8.

9. The committee shall be authorised, in the event of any change becoming necessary in the terms or conditions of public sales, to prescribe the means of introducing such change which shall take effect after approval by a majority of the members of the association present at a meeting convened for that purpose.

10. The committee may employ and pay for a Secretary and fix the remuneration and appoint an Honorary Treasurer, and Honorary Auditor.

11. If ten members of the committee either present at a meeting or by intimation to the Secretary in writing, decide that any member (or firm) of the association is undesirable, the committee shall have power to bring the name of such member to the notice of the association in special or general meeting, who shall decide by a majority of three-fourths present and by ballot whether the named member (or firm) shall be expelled from membership.

12. The Secretary shall convene a general meeting of the association on the requisition in writing of any ten members. The notice convening such meeting shall specify the objects of same, and shall be sent seven clear days before the date fixed. Any resolution carried in general meeting shall be binding on the members of the association notwithstanding that such resolution may override a decision previously arrived at by the committee.

13. An annual general meeting shall be held (if possible in July) for presentation of an annual account of the affairs of the association, for the election of four members to the committee in the place of those retiring, and to frame such rules, alterations and additions as may be necessary.

Messrs.....hereby acknowledge and confirm your contract
dated.....for.....

APPENDIX XLIV.

A contract form used in Havre for buying or selling "Cherry" coffee.

London, the.....19

No. of transaction.

Bought through the agency of.....from.....
by.....of Havre.

Quantity.—About.....cwt. (English) equivalent at 1/- per cwt. to.....fair average quality of the season as represented by the total exports of all the firms at the place of exportation at the time of shipment.

Packings.—In plain or double bags to the choice of sellers or in packets.

Price and conditions.—.....per cwt. c.i.f. steamer or steamers Havre, net landed weight at Havre, risks of voyage and eventual transshipments (such as monsoon damage, discoloration deterioration during the voyage, direct or indirect damage, quarantine, war risks, import or export prohibitions) to be at the charge of the buyers.

Shipment:

or

Deposited on board
or at the disposal
of the ship.

Destination

Time.....

{ by steamer or steamers allowing trans-shipment in India and/or Egypt, and/or France, and/or call at port or ports outside Europe. All calling in Europe outside France so long as there will not be any additional customs duty for the buyers. } Havre.

Re-imbusement.—By drafts from....., at three months' sight, to the buyers, drawn at their option, or from India or at the arrival in London of the bill of lading or eventually against Delivery Order (in this case.....undertake to deposit the bills of lading at the Compagnies des Docks-Entrepôts, at the disposal of the buyers), documents to be held up till payment, drafts to be cashed as it suits the buyer at the rate of Bank of France, but at the latest on the arrival of the steamer at the port of destination or quarantine if the latter takes place before the expiration of the draft.

Insurance for business c.f.—To be covered provisionally by the buyers forthwith including eventual war risks and all other risks from the moment the goods are found in the shop, at the port of shipping (particularly of fire) and in lighter and during transshipment until safely delivered on the wharf and/or at the shops of consignors with option to the sailors and steamers to call at the Malabar Coast and/or Colombo and/or Tuticorin. The sellers do not undertake to telegraph shipping. The buyer who does not give bank repayment should return to the sellers the annexed bill, with the signature of the insurance company, with whom the lot sold has been insured against transport risk provisionally after the conclusion of the sale. The value of all package of a consignment totally lost to be recoverable.

Insurance for business c.i.f.—To be covered by the sellers, for net invoice amount, increased by 2 per cent on the following conditions:—Exemption 3 per cent, entire payment as soon as the exemption is obtained. The policy will be ceded to the buyer with all its rights and risks. The insurance against war risks is at the charge of the buyer, as much for c.f. business as c.i.f. business and to be covered by him with first class companies. The buyer to delivery to the sellers on demand, a declaration on behalf of the insurers certifying the guarantee of these risks and eventually the respective insurance policy.

Special conditions.—(see at *back).....

The weighing to be controlled by the agent of the sellers at Havre and loss of weight declared, will be refunded on presentation of a note of the weight signed by him.

Accepted.

Buyer.

Seller.

Agent.

* See opposite page.

APPENDIX XLIV—*contd.**Particular conditions.*

1. In the event of accidents or superior force preventing the shipment, such as export prohibition, fire, siege, war or revolution, strike preventing the arrival at the port of shipment, the present agreement will unconditionally be annulled for the whole or the portion remaining to be shipped or forwarded. All eventual consequences of quarantine and sanitary measures remain at the charge of the buyer.

2. The date of the bill of lading or a certificate signed by the Captain or Agent of the ship, as to the date on which the goods were ready for shipment shall be deemed the definite proof of the date of shipment.

3. The sellers will forward the bills of lading to Europe by mail after shipment. In the event of these only arriving after arrival of the vessel which carries the goods, or should the documents be lost or be lost on the way, no liability is attached to the sellers. In this case the draft will be presented endorsed, fixing the date of final acceptance, which should be at the latest on the arrival of the goods in the port of destination. In the event of the documents being lost on the way and would not come in confirmation of the draft, the sellers could even put the buyers to obtain delivery of the goods.

For c.i.f. sales, in the event of the insurance policy (as is sometimes the case) not be ready in time to be presented with the draft and the bill of lading, the drawees are nevertheless bound to accept the draft of the sellers, who undertake that the policy shall follow as soon as possible, and who hereby guarantee its production.

4. Since in consequence of the development of routes etc., in India the produce exported from the Malabar coast go down to all the ports on the coast, the sellers reserve to themselves the right of shipping from any port on the Malabar coast from Mangalore to Alleppey inclusive, or Madras. To be covered by insurance by whom it may concern according to the preceding explanations. The damages in sea, from the time the goods leave the land, are to the charge of the buyer, who have recourse to the insurers according to the conditions in the insurance policy.

5. The steamers carrying the goods should be first class, i.e., to say not below 90-A.I. or an equivalent class; otherwise the sellers to make good the drawback to the buyer, who had bought at c.f. conditions.

6. Freight according to chartering to be paid in India and then to be included in the invoice and draft, or by payment in cash on the arrival of the ship, in the latter case without allowance of interests for the seller. If there is difference between the freight indicated in the invoice and that which the buyer should pay to the Captain, this difference will be settled at the time of settling the difference in weight.

7. If for any reason there arises a difference between the sellers and the buyer as to the acceptance of the goods, the maritime insurance provisionally covered should be nevertheless definitely covered by the buyer if the sale is c. & f. or by the sellers if the sale is c.i.f. for account of the concerned, so that the goods do not remain for a moment uninsured. On the contrary maritime loss and damage to be at the charge of whosoever fails to act according to the aforementioned.

8. Weighing and other charges at the port of destination are always at the charge of buyer, even when the goods are sold on landed weight. To fix the actual tare 5 per cent. of the bags will be emptied and weighed together. The loss in weight will be refunded by the sellers on presentation of a detailed note regarding the weight indicating also the actual tare signed by the seller's representative who superintended the weighing. The rights of entry in Europe are at the charge of the buyer.

9. No claim to be made by the buyer to the sellers, unless made within 10 days of the landing of the goods. The contract cannot be annulled on account of any difference in quality. All disputes on the interpretation of the present contract will be settled by arbitration at Havre where Mr. nominated by the sellers and Mr. by the buyers and if they do not come to a settlement a third arbitrator will be nominated by the Syndicate of Coffee Dealers at Havre. The decision of the arbitrators will be final.

Samples to be drawn in the presence of the seller's representative.

Eventual arbitration.

If there is to be arbitration the demand for it should be made by the buyer within ten days of delivery.

The buyer who asks for arbitration will draw immediately in the presence of the seller's representative a sample for arbitration, sealed soon after by the two parties and

APPENDIX XLIV—*concl'd.*

which shall be submitted for the consideration of the arbitrators, according to the following terms :—

The arbitration samples should be drawn out (deducted) according to the practice at Havre.

The arbitration is entrusted to two arbitrators (sworn brokers) at Havre with the following mission :—

1. To state after comparison with fair average quality if the sample of coffee sold by..... to the buyer answers to the designation "fair average quality" equivalent to

If the colour of the beans changes according to the month of shipment and according as the lot was despatched by steamer or sailor, the arbitrators need not take into account the colour of coffee.

2. To state if there is less value to the litigious lot with reference to the deposited lot. In the event of (inferior) less value to determine and the allowance to be made to the buyer. There will be allowance as soon as the difference between the standard and the goods exceeds 1/- per cwt. In fixing the allowance, the allowance of 1/- per cwt. will be deducted. If the difference is smaller than 1/- per cwt., there will be no allowance to either side. The buyer will be held to take delivery of the goods with allowance fixed by the arbitrators.

All arbitration decision which will not be strictly in accordance with the conditions formulated in Articles 1 and 2 above will not be obligatory to the sellers

Each party will choose for arbitrator as sworn agent, who could, in the case of non-agreement, nominate a third arbitrator who is to be also a sworn agent. If one of the parties feels aggrieved by the result of the arbitration, he could make a counter-arbitration by a commission composed of two sworn agents, one of whom is nominated by the sellers and one by the buyer. These two agents have the right to call a third person to be a third arbitrator. This appeal will be final and without other recourse. For the arbitration each party will pay to his own arbitrator, whatever be the result. The expenses of the counter-arbitration will be borne by the losing party.

APPENDIX XLV.

Municipal taxes (terminal or octroi) on coffee in some of the cities in India.

Name of municipality.		Rate of tax.	
		Rs.	A. P.
Bombay—			
Ahmedabad	.	0	1 6 Per maund.
Broach	.	1	4 7 " "
Godhra	.	0	2 0 " "
Ahmednagar	.	0	0 8 " "
Dhulia	.	0	2 0 " "
Nasik	.	0	0 6 " "
Sholapur	.	0	8 0 " "
Barsi	.	0	2 0 " "
Belgaum	.	0	2 4 " "
Bijapur	.	1	0 0 " "
Dharwar	.	1	8 0 " "
Hubli	.	0	2 0 " "
Karwar	.	{ 0	12 0 " " (on seeds).
		{ 1	4 7 " " (on powder).
Kumta	.	1	4 7 " "
Chiplun	.	0	10 0 " "
Sangli	.	0	0 3 " "
Kolhapur	.	0	4 0 " "
Ramdurg	.	1	4 7 " "
Phaltan	.	1	4 0 " "
Jamkhandi	.	0	1 0 " "
Cambay	.	3	0 0 " "
Deolali	.	3	2 0 Per cent <i>ad valorem</i> .
Poona	.	3	2 0 Do.
Satara	.	0	0 3 Per rupee or part thereof <i>ad valorem</i> .
United Provinces—			
Allahabad	.	0	0 3 Per rupee.
Fyzabad	.	0	0 6 " "
Benares	.	0	0 6 " "
Gorakhpur	.	0	0 3 " "
Barilly	.	0	0 6 " "
Jhansi	.	0	0 3 " "
Meerut	.	0	0 6 " "
Agra	.	0	8 0 " maund.
Moradabad	.	1	0 0 " "
Dehra Dun	.	0	8 0 " "
Lucknow	.	0	8 0 " "
Cawnpore	.	0	6 0 " "
Punjab—			
Lahore	.	{ 0	8 0 Per maund on Indian manufactured coffee.
		{ 1	0 0 Per maund on foreign manufactured coffee.
Ambala	.	0	8 0 Per maund.
Amritsar	.	0	6 0 " "
Jullundur	.	1	4 0 " "
Rawalpindi	.	0	0 6 " rupee.
Sialkot	.	0	0 6 " "
Ferozepur	.	0	0 6 " "
Mysore State—			
Bangalore City	.	0	0 3 per rupee <i>ad valorem</i> on raw coffee and powder.
Mysore City	.	0	0 3 " " "

APPENDIX XLVI.

Legislation relating to adulteration of coffee in different provinces and States.

MADRAS PRESIDENCY.

The 19th September 1938.

1. No person shall by himself or by his servant or agent—

(a) Add any substance other than chicory to coffee intended for sale ; or

(b) sell or offer or expose for sale any coffee to which any substance other than chicory has been added.

2. Every advertisement and every price list or trade list describing an article of food which consists of a mixture of coffee and chicory, whether untreated or ground or powdered or compressed, shall describe such mixture in the manner provided in the schedule to these rules.

3. No such advertisement, price list or trade list shall contain any words which might imply that such article of food is pure coffee.

4. No person shall sell or offer or expose for sale or deposit in any place for the purpose of sale, or despatch or deliver to any purchaser, broker or agent, any mixture of coffee and chicory unless—

(1) it is contained in a tin or other receptacle to which a label is affixed in the manner provided in the schedule to these rules ; and

(2) the contents of the tin or other receptacle are in accordance with the description on the label :

Provided that where a mixture of coffee and chicory is sold by weight and is not placed in the tin or other receptacle in which it is delivered to the purchaser until immediately before such delivery, the provisions of the schedule to these rules shall be deemed to be satisfied if the matter therein required to appear on the label affixed to the tin or other receptacle is printed on a separate label or notice delivered to the purchaser at the time of purchase.

Explanation.—For the purpose of this rule a mixture shall be deemed to accord with the description as given on the label if the actual percentage of coffee or chicory, as the case may be, in the mixture is within 5 of that declared on the label.

5. Whoever commits a breach of any of the above rules shall be punishable—

(a) in the case of a first conviction with fine which may extend to one hundred rupees ; and

(b) in the case of a subsequent conviction with fine which may extend to five hundred rupees.

Schedule.

1. Every tin or other receptacle containing a mixture of coffee and chicory shall have affixed to it a label upon which is printed such one of the following declarations as may be applicable.

(a) Where in a mixture of coffee and chicory the proportion of chicory is 50 per cent or less, the declaration shall be in the following form :—

COFFEE BLENDED WITH CHICORY			
This mixture contains :—			
Coffee	.	.	per cent
Chicory	.	.	per cent

(b) Where in a mixture of coffee and chicory the proportion of chicory exceeds 50 per cent, the declaration shall be in the following form :—

CHICORY BLENDED WITH COFFEE			
This mixture contains :—			
Chicory	.	.	per cent
Coffee	.	.	per cent

2. (a) The labels shall be printed in dark block type upon a light coloured ground in English and in the chief language or languages of the district in which the food is sold or offered or exposed for sale.

(b) There shall be a surrounding line enclosing the declaration.

(c) No matter other than that specified in clause 1 shall be printed within the surrounding line.

(d) The type used for the declaration shall not, in any part, be less than one-eighth of an inch in height or if the gross weight of the tin or other receptacle does not exceed twelve ounces, one sixteenth of an inch in height.

3. The label shall be securely affixed to the tin or other receptacle so as to be clearly visible. If there is attached to the tin or other receptacle a printed transfer or other wrapper bearing the name, trade mark, or design representing the brand of the mixture of coffee and chicory, the declaration shall be printed as part of such wrapper. Any such wrapper shall, in addition, bear the name and address of the manufacturer of the mixture of coffee and chicory or of the dealer or merchant for whom it is manufactured.

4. Wherever the word "Coffee" appears on the label of a tin or other receptacle containing a mixture of coffee and chicory in which the coffee exceeds 50 per cent it shall be immediately followed by words indicating that it contains chicory, printed in type of the same size as that used for the word "Coffee". In the case of a mixture containing more than 50 per cent of chicory any printed label shall describe the contents as chicory and may also state that it is blended with coffee but no wording shall be used that might suggest that the mixture is sold as coffee whether blended or not.

APPENDIX XLVI—*contd.*

(a) Coffee shall be the seed of cultivated varieties of *Coffea arabica*, *C. liberica* and *C. robusta*.

(b) Green, raw or unroasted coffee shall conform in variety and place of production to the name it bears.

(c) Roasted coffee shall be properly cleaned green coffee which, by the action of heat (roasting), has become brown and has developed its characteristic aroma, and shall not contain any admixture of other substances than coffee.

Where a sample of coffee does not comply with the standards prescribed in clauses (a), (b) and (c), it shall be presumed for the purposes of the Act until the contrary is proved that the coffee is not genuine.

PUNJAB.

The 22nd February 1938.

Amendments.

1. In the schedule appended to rule 3 after item 21 the following items shall be added, namely :—

Serial No.	Article of food.	Description.	Excess in the constituents.	Deficiency in the constituents.	Remarks.
22	Coffee	The seeds of cultivated varieties of <i>Coffea arabica</i> , <i>C. liberica</i> and <i>C. robusta</i> .	..	..	The seeds must have the characteristic appearance under the microscope.
23	Green coffee, raw coffee, unroasted coffee.	Coffee seed freed from all but a small portion of its spermoderm and conforming in variety and in place of production to the name it bears.	..	..	Do.
24	Roasted coffee "Coffee".	Properly cleaned green coffee seed which by the action of heat (roasting) has become brown and has developed its characteristic aroma.	..	..	Do.
25	French coffee, tablet coffee or coffee mixed with chicory.	Mixture of coffee seed with chicory in equal proportions.	More than the declared proportion of chicory.	Less than the declared proportion of coffee.	..

CENTRAL PROVINCES.

The 5th August 1937.

1. (i) Commercial coffees should consist of the seeds—

(a) *C. arabica* (Mocha coffee),

(b) *C. liberica* (Liberian coffee), and

(c) *C. robusta*.

(ii) Green coffee, raw coffee or unroasted coffee is coffee freed from all but a small portion of its spermoderm and conforms in variety and in place of production to the name it bears.

(iii) Roasted coffee is properly cleaned green coffee which by the action of heat (roasting) has become brown and has developed its characteristic aroma.

(iv) Ground coffee is "roasted coffee" ground down to a granular powder.

2. No coffee sold or prepared for sale as "green" "raw" or "unroasted" coffee, or as "roasted coffee" shall contain any beans or seeds other than those specified in paragraph 1 and shall be free from any artificial colouring matter and from any coating facing or glazing substances.

APPENDIX XLVI—*contd.*

3. (i) No coffee sold or prepared for sale as pure "ground" coffee shall contain any foreign substance, such as, starches, sugars, powdered roots, tubers, cereals, leguminous and other seeds, etc., and shall be free from impurities such as sand, mineral matter, etc.

(ii) On analysis, pure coffee should give the following results:—

Moisture—limit six per cent.

Ash (which should be white)—3.5 to 5 per cent.

Caffeine—1 to 1.3 per cent.

Extract—21 to 26 per cent (average 24 per cent).

Fats (petroleum spirit extract)—10 to 12 per cent.

Fats (by maceration methods)—13 per cent.

Microscopical examination should show no trace of extraneous matter.

Rules.

1. The only permissible adulterant to coffee is chicory which may be added to the coffee in a proportion not exceeding fifty. The adulterant shall be clearly indicated on the label of the container or packet, containing the mixture, in a conspicuous place and in distinct legible letters.

2. When ground coffee is sold or exposed for sale in loose form, i.e., other than in specifically prepared packets or containers, the receptacles containing the coffee, or on which it is exposed or kept for sale shall be labelled with labels indicating the nature and extent of the adulterant present (if any) in letters not less than one-half of an inch in size. Absence of such a label will be taken to imply that the coffee so kept or exposed for sale is meant to be sold as pure coffee.

ASSAM.

The 12th May 1938.

Coffee.—Coffee shall be the seeds of cultivated varieties of *Coffea arabica*, *C. liberica* and *C. robusta*, which must have the characteristic appearance under the microscope.

Green, raw or unroasted coffee shall be coffee seed freed from all but a small portion of its spermoderm and shall conform in variety and place of production to the name it bears.

Roasted coffee shall be properly cleaned green coffee seed which by the action of heat (roasting) has become brown and has developed its characteristic aroma, and shall not contain any admixture of other substances than coffee.

Coffee may be sold or offered for sale mixed with chicory provided that the proportion of chicory does not exceed fifty per cent and the container bears a label stating the exact proportion of the chicory.

SIND.

Revised Rules framed under the Bombay Prevention of Adulteration Act, 1925.

2. *Definitions.*—In these rules, unless there is anything repugnant to the subject or context—

(xviii) "Coffee" means the seed of cultivated varieties of *Coffea arabica*, *Coffea liberica* and *Coffea robusta*;

"Green, raw or unroasted coffee" is coffee freed from all but a small portion of its spermoderm, and conforms in variety and in place of production to the name it bears;

"Roasted coffee" means properly cleaned green coffee which by the action of heat (roasting) has become brown and has developed its characteristic aroma and shall not contain any admixture of other substances than coffee save as under:—

The only permissible adulterant to coffee is chicory, which may be added to the coffee in a proportion not exceeding 50 per cent. The fact of such an addition and the exact proportion of the adulterant shall be clearly indicated on the label of the container or packet, containing the mixture, in a conspicuous place and in distinct legible letters.

APPENDIX XLVI—*contd.*

When ground coffee is sold or exposed for sale in loose form, *i.e.*, other than in specifically prepared packets or containers, the receptacles containing the coffee, or, on which it is exposed or kept for sale, shall be labelled with labels indicating the nature and extent of the adulterant present (if any) in letters not less than one-half of an inch in size. Absence of such a label will be taken to imply that the coffee so kept or exposed for sale is meant to be sold as pure coffee.

AJMER-MERWARA.

The 29th September 1937.

(1) Add the following as item II in the Schedule to rule 3 :—

II. Coffee	(i) Commercial coffees should consist of the seeds of—	Moisture more than 6 per cent.	
	(a) <i>C. arabica</i> (Mocha-coffee) . . .	Ash (which should be white in pure coffee) more than 5 per cent.	Ash (which should be white in pure coffee) less than 3.5 per cent.
	(b) <i>C. liberica</i> (Liberian coffee) . . .		
	(c) <i>C. robusta</i> . . .		
	(ii) Green coffee, raw coffee or unroasted coffee is coffee freed from all but a small portion of its spermoderm and conforms in variety and in place of production to the name it bears.	Fats (petroleum spirit extract) more than 12 per cent.	Fats (petroleum spirit extract) less than 10 per cent.
	(iii) Roasted coffee is properly cleaned green coffee which by the action of heat (roasting) has become brown and has developed its characteristic aroma.	Fats (by maceration methods) more than 13 per cent.	Fats (by maceration methods) less than 13 per cent.
	(iv) Ground coffee is roasted coffee ground down to a granular powder.		

(2) Add the following to note to rule 3 :—

NOTE.—Coffee may be sold or offered for sale mixed with chicory in a proportion not exceeding 50 per cent. The container should bear a label stating proportion of chicory mixed with the coffee.

MYSORE.

The 30th March 1938.

Coffee means the seed of cultivated varieties of *Coffea arabica*, *C. liberica* and *C. robusta*.

Green, raw or unroasted coffee is coffee freed from all but a small portion of its spermoderm and conforms in variety and in place of production to the name it bears.

"Roasted coffee" means properly cleaned green coffee which by the action of heat (roasting) has become brown and has developed its characteristic aroma and shall not contain any admixture of other substances than coffee save as under :—

The only permissible adulterant to coffee is chicory, which may be added to the coffee in a proportion not exceeding 50 per cent. The fact of such an addition and the exact proportion of the adulterant shall be clearly indicated on the label of the container or packet, containing the mixture, in a conspicuous place and in distinct legible letters.

When ground coffee is sold or exposed for sale in loose form, *i.e.*, other than in specifically prepared packets or containers, the receptacles containing the coffee or, on which it is exposed or kept for sale, shall be labelled with labels indicating the nature and extent of the adulterant present (if any) in letters not less than one-half of an inch in size. Absence of such a label will be taken to imply that the coffee so kept or exposed for sale is meant to be sold as pure coffee.

TRAVANCORE.

The 14th September 1938.

After Rule 15, the following shall be added as a new Rule, namely :—

15-A. "Coffee" means the seed of cultivated varieties of *Coffea arabica*, *C. liberica* and *C. robusta*.

Green, raw or unroasted coffee is coffee freed from all but a small portion of its spermoderm and conforms in variety and in place of production to the name it bears.

APPENDIX XLVI—*concl'd*.

"Roasted coffee" means properly cleaned green coffee which by the action of heat (roasting) has become brown and has developed its characteristic aroma and shall not contain any admixture of other substances than coffee save as under :—

The only permissible adulterant of coffee is chicory which may be added to the coffee in a proportion not exceeding fifty per cent and the exact proportion of the adulterant shall be clearly indicated on the label of the container or packet containing the mixture in a conspicuous place and in distinct legible letters.

When ground coffee is sold or exposed for sale in loose form, that is, other than in specifically prepared packets or containers, the receptacle containing the coffee or on which it is exposed or kept for sale shall be labelled with the labels indicating the nature and extent of the adulterant present, if any (in letters not less than half an inch in size). Absence of such a label will be taken to imply that the coffee so kept or exposed for sale is meant to be sold as pure coffee.

COCHIN.

The 25th June 1937.

28. (a) Coffee shall be the seed of cultivated varieties of *Coffea arabica*, *C. liberica* and *C. robusta*.

Green coffee, raw coffee, unroasted coffee shall be coffee freed from all but a small portion of its spermoderm and shall conform in variety and in place of production to the name it bears. Roasted coffee shall be properly cleaned green coffee which by the action of heat (roasting) has become brown and has developed its characteristic aroma.

(i) Coffee shall contain :—

- (i) a proportion of ash of not less than 3.5 per cent and not more than 5 per cent,
- (ii) a proportion of moisture of not more than 6 per cent,
- (iii) a proportion of caffeine of not less than one per cent and not more than 1.3 per cent, and
- (iv) a proportion of an extract of not less than 21 per cent and not more than 26 per cent.

(c) Where a sample of coffee does not comply with all the standards specified in sub-rules (a) and (b), it shall be presumed, for the purpose of this Regulation, until the contrary is proved that the coffee is not genuine.

Add the following as paragraph 2 to Schedule I numbering the existing paragraph as paragraph 1 :—

"2. This mixture of coffee with chicory contains at least (a)..... per cent of genuine coffee.

(a) Here insert the minimum amount of coffee which may be present. If preferred, the words, per cent, may be omitted and the proportion given in words as a fraction, e.g., one fourth, one third, one half.

For mixture of coffee with chicory containing not less than 30 per cent of coffee the following name is approved :—

In English— 'French coffee or Tablet coffee'."

PUDDUKKOTTAI.

The 1st September 1937.

Amendment.

The following shall be added as Rule 25-A of the said rules in Part V, viz.—

Coffee.—Coffee shall be the seed of cultivated varieties *Coffea arabica*, *C. liberica* and *C. robusta*.

Green, raw or unroasted coffee shall conform in variety and place of production to the name it bears.

Roasted coffee shall be properly cleaned green coffee which by the action of heat (roasting) has become brown and has developed its characteristic aroma, and shall not contain any admixture of other substances than coffee.

Coffee may be sold or offered for sale mixed with chicory provided that the container bears a label stating the proportion of chicory mixed with the coffee.

GLOSSARY OF VERNACULAR TERMS.

A

Arotidar . . . Commission agent.

B

Bardan . . . A deduction on account of weight of bags or tare.

Bazár . . . A market.

Byapari . . . A trader ; an itinerant merchant.

C

Chalan . . . An invoice or waybill.

Chetties . . . Indigenous bankers.

D

Dalal . . . Broker.

Dalali . . . Brokerage.

Dharma . . . A market charge on account of charity.

G

Gur . . . Unrefined sugar.

H

Hundi . . . A bill of exchange or draft.

K

Kahveh khana . . . Coffee house.

Kariana . . . Grocery.

Kawer . . . Handle.

M

Mofussil . . . Rural.

Mukada . . . Deduction for unloading, carting and *dharma*.

P

Pandal . . . A raised platform.

Pucca . . . Literally—true or mature or real.
A *pucca Arotidar* is a true wholesaler.

R

Ret . . . Sand.

T

Taccavi . . . Money advanced to cultivators.

Takka . . . Deduction which is equal to 12 per cent interest per annum for the period of credit.

Taluk . . . A sub-division in a district.

Tehsildar . . . Subordinate revenue officer in direct charge of *tehsil* (sub-division).

V

Vallam . . . A kind of canoe.

Vatav . . . Cash deduction allowed to *dalal*.

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